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June 10, 1968

RAILWAY AGE

THE TRANSPORTATION WEEKLY

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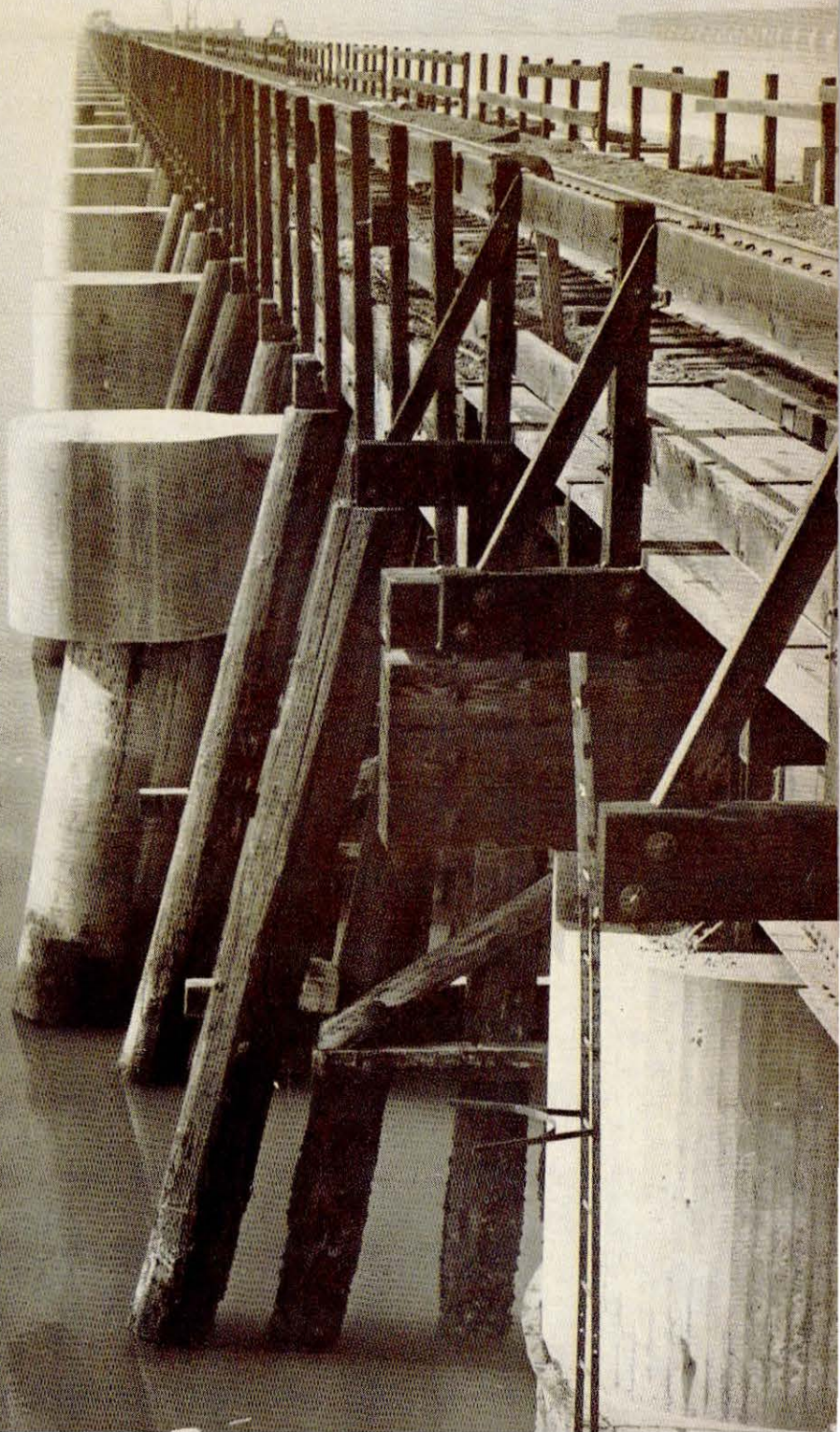

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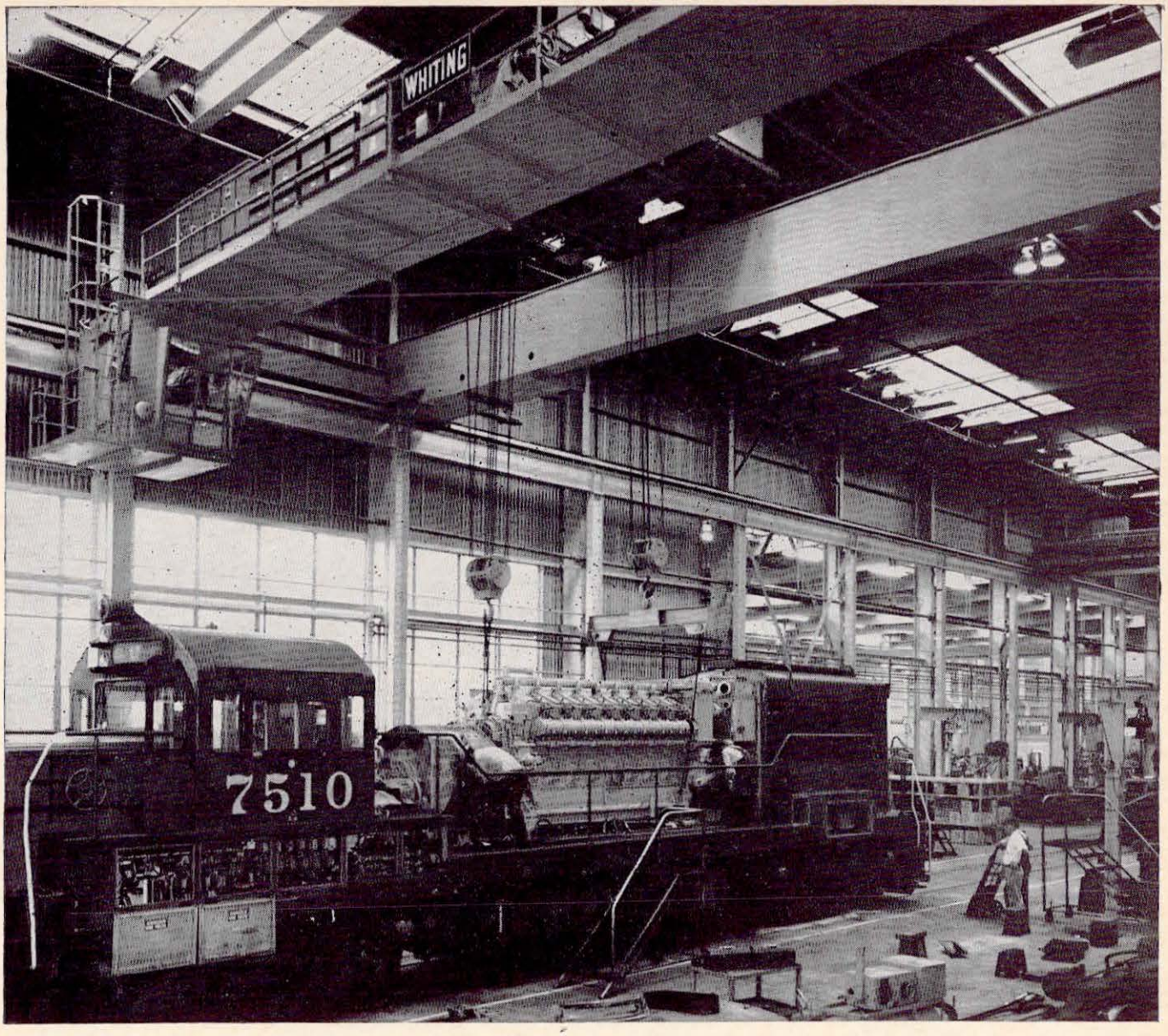

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RAILWAY AGE

June 10, 1968 • Vol. 164, No. 22

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And the entire job was done with minimum interference to traffic.

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... AND COMING NEXT WEEK

TPC—for terminal performance control—is giving Great Northern and its customers a new weapon in the old fight against terminal congestion and terminal delay. A report in the June 17 issue tells how the system is working—and how it's being expanded. Also coming June 17: A preview of the discussions operating officers will be having at the annual meeting of the American Association of Railroad Superintendents.

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"Added to that, the editor's comment, Washington report and labor notes help to clarify views on the issues of the day."

SHORT AND SIGNIFICANT

D&H shareholders approve road's sale to N&W By July 1, the Delaware & Hudson is expected to be a part of the Norfolk & Western system, following a vote of D&H shareholders last week favoring the consolidation. In a final share count, 1,069,467 shares voted in favor of the sale, and 405,819 voted against, according to D&H President Harry G. Silleck, Jr. Former D&H Chairman Frederic C. Dumaine, Jr., has challenged the railroad's proposed sale to N&W, and may take legal steps to prevent its consummation by July 1. Sale of the D&H to N&W was directed by the ICC last year when the Commission approved the Penn Central merger. Under the terms of the sale, N&W will get the D&H in exchange for 412,627 shares of N&W and a $1 million 6% five-year N&W note.

Cooperation, not laws, will promote safety—Goodfellow AAR President Thomas M. Goodfellow last week urged railroad unions and the government to cooperate with railroad management in attempts to solve railroad safety problems. Goodfellow made his plea at the House Interstate Commerce Committee's hearing on the railroad safety bill sponsored by the Department of Transportation (RA, May 27, p. 12). He said "cooperation rather than legislation is the most effective way to reach the goal we are all seeking—the ultimate in railroad safety." Goodfellow assured the committee that railroad management "is more deeply concerned than anyone else with all aspects of railroad safety," and that its opposition to the proposed legislation is not opposition to railroad safety. Rather, he said, it reflects the serious doubt that legislation is the "magic wand that can produce safety."

ACF to merge with Oklahoma pipeline operator Managements of ACF Industries and Williams Brothers Company revealed last week that the two companies have agreed to merge. The agreement is subject to approval by the boards of directors and shareholders of both companies. The combined company—to be known as ACF-Williams—would bring together ACF, a manufacturer of railroad equipment, supplier of automotive fuel system components and a lessor of tank and freight cars, and Williams, one of the largest independent products pipeline companies and a worldwide petroleum engineering and construction firm. ACF Chairman John F. Burditt would become chairman and chief executive officer of the new company, and ACF President Henry A. Correa would be president of the merged companies. John H. Williams, Williams president, would be chairman of the executive committee, and William T. Taylor would be chairman of the finance committee. All of Williams Brothers existing operations would continue to be headquartered in Tulsa, Okla., and the combined headquarters would be in New York City.

Union Tank plans merger with Litton Industries In another corporate merger development last week, news of a preliminary agreement to consolidate was announced by Charles B. Thornton, chairman of the giant Litton Industries, and J. W. VanGorkom, president of Union Tank Car Co. Under terms of the agreement, Union common shares would be exchanged for either Litton Convertible Preference, or Litton Series B Preferred stock.

NRLC appoints a UP man as new general counsel The National Railway Labor Conference, the railroads' voice in national labor negotiations, has announced the appointment of James A. Wilcox as general counsel. Wilcox was formerly assistant general solicitor of Union Pacific in Omaha. NRLC Chairman John P. Hiltz, Jr., said Wilcox will succeed J. R. Wolfe, who is joining the Chicago & North Western as vice president-labor relations. Wilcox has been with the UP since 1945, and is co-chairman of the Railway Labor Law Section of the American Bar Association.

MONDAY MORNING REPORT

MERGER: JUST SLOW BUT SURE?

In all honesty, the railroad merger movement has not done badly. Progress has been slow, but there has been progress. It would be hard to fault the over-all performance of the ICC, either its examiners or its commissioners. It would also be hard to fault the judicial treatment of merger proceedings. With both the Commission and the courts, there has been a strong element of agreement that well-thought-out mergers should be permitted, subject to the protection of labor, stockholders, the public, and those roads which might suffer.

ENTER THE JUSTICE DEPARTMENT—WHY AND HOW?

Now, however, new cause for concern has developed. Predictably, it comes from government—not the ICC, not the courts, but the Department of Justice. The case in point is the Burlington Northern merger, to which nobody but Justice now officially objects.

RAILROADS SHOULD LOOK AGAIN AT THEIR PROPOSALS . . .

A bit more than a year ago, William H. Tucker, then chairman of the ICC, had harsh words for those roads involved in the complicated merger situation in the West. He charged that "the majority of railroads are attempting to maximize their own special positions . . . without any real regard for the public interest or the interests of other railroads and the vital services which such roads perform." He added: "I strongly urge that each carrier . . . review its own proposal with the view toward amending or modifying it to meet its realistic needs in a tough-minded assessment of the over-all public considerations."

. . . SO BN DID, AND THEN WHAT HAPPENED?

Tucker's barbs were aimed at the Rock Island case, not at Burlington Northern. But BN, in effect, was doing as he suggested. After an initial rejection before the ICC, there was an "amending and modifying" to satisfy the demands of other roads, presumably in the public interest. The ICC was satisfied. Second time around, it approved the merger. There still was some opposition, but it received neither judicial nor stockholder support. Then Justice stepped in—and charged that the BN roads may have resorted to collusion to get opponents to withdraw their opposition.

MERGER "POLICY:" OR IS THERE ONE?

On one hand, railroads are urged to "amend and modify." On the other hand, they did and now they're suspected of collusion. Somewhere, merger-watchers might agree, that vast establishment known as the federal government may have a right hand and a left hand that aren't speaking to each other.

RAILWAY AGE
THE TRANSPORTATION WEEKLY
June 10, 1968

WEEK AT A GLANCE

New GE power: Prototype for the future?

The first U.S. electric locomotive to be powered by commercial frequency (60-cycle) alternating current was unveiled at the annual meeting of Edison Electric Institute in Philadelphia last week. General Electric showed the electric utility trade association the first of two 5,000-hp rectifier type units it is building for the Muskingum Electric Railroad, a new utility-owned private coal hauler which will serve a generating station of Ohio Power in southeastern Ohio. The 15-mile automated railroad being built for the American Electric Power subsidiary (RA, Oct. 23, 1967, p. 18) will not only be the most economical method of moving coal (vs. trucks and conveyors) but will also be a test tube for commercial-frequency, 25,000-volt electrification in America.

High-voltage, commercial frequency power is used on practically all of the rapidly expanding electrifications elsewhere in the world. The EEI exhibit, which also included two Penn Central "Metroliners" (see p. 12), was aimed at showing utilities the potential market for power represented by railroads, a volume second only to home heating.

CN offers new intermediate service

Canadian National, not one to sit back on its laurels won as a passenger-service innovator, has come out with a new rail operation designed to please the inter-city traveler. Called "Tempo," CN's service on the Toronto-Windsor and Toronto-Sarnia runs is for passengers who want to commute between major cities quickly and comfortably and with a minimum of expense and baggage. "Tempo" is offering fast, frequent service over intermediate distances in densely populated corridors where the problems of highway congestion are in the railroad's favor. Station stops are limited to two minutes or less. Equipment consists of a locomotive, 39-seat club car, three 82-seat coaches, and cafe car with a 26-seat lounge and 16-passenger coach section.

L&N=ORC&B agree on crew consist, radio issues

Another break in the continuing dispute over train service work rules came last week, with agreement between Louisville & Nashville and the Order of Railway Conductors & Brakemen on manning requirements and use of radio. The settlement provides that:

—Conductors working on crews with less than two trainmen will receive added pay of $4 a day.

—Trains of not more than 75 cars with three-man crews may be operated without a caboose. Conductors on these trains will receive an additional cent per mile.

—Conductors will be furnished radios weighing not more than two pounds 14 ounces. If heavier equipment is used, they will be paid an additional $2.

—The L&N-ORC&B agreement includes these observations: "It appears advantageous to all concerned that certain present and foreseeable truck and airline competition be met by operating short, fast trains consisting of a maximum of 75 cars, with or without a caboose, manned by a conductor, and engineer and a trainman. . . . The parties are in agreement that the use of radio contributes materially to the safe and expeditious movement of trains." ORC&B demands, made more than three years ago, had asked that all road-train crews include a conductor and not fewer than two trainmen, that cabooses be used on all freight trains, and that extra payment be given for carrying radio.

Earlier, L&N reached agreement with the Brotherhood of Railroad Trainmen on a radio dispute by agreeing to pay an additional $2 per trip or tour of duty to trainmen who are required to carry radio. Still earlier, the ORC&B and Illinois Central agreed on extra compensation for conductors working crew assignments with fewer than two trainmen.

How the railroads got caught

Over 100 years ago, America's first railroads were faced with a terrific challenge.

There was a continent to be developed, river-and-harbor-based cities to be joined in an overland network, new industries to be served.

There was nothing else but horses and wagons to do the job.

The railroad response was magnificent: a revolution in mechanical, civil and electrical engineering—and in manufacturing, too. Indeed, a more lagging response might have saved the railroads from becoming too vulnerable to trouble of many kinds.

But vulnerable they became.

Because there was literally no other way for people and goods to travel faster than a loaded horse, *railroads extended their lines into thousands and thousands of small-scaled communities*—even though trains were by their very nature large in scale. Later, smaller transportation units such as trucks, buses and aircraft would make this "local delivery" type operation—passenger service in particular—utterly uneconomic.

Because the race of the railroads to keep up with the growth of the country discouraged duplication of service, *the railroads naturally developed in a pattern of monopoly*. There were abuses—as in oil, electric power, telephone service, patent control—and the railroads were to be chained with monopoly-type regulations. Th would burden them cruelly when cars, trucks, buses an airplanes made transportation fiercely competitive.

Because so much that moved had to move by trai *the railroads became convenient "tax collectors."* It wa easier to collect taxes from the railroad—which would i effect pass them on to all the people in the form of highe charges—than it was to collect them from people indi vidually. The time would come when the railroad's eco nomic power would shrink but the tax load would no shrink.

The wonder is that when everything went against th railroads they stood up against it so well.

For this, great credit must be given to a tremendou performance by thousands and thousands of skilled an committed railroaders.

How the railroads are fighting their way ou

Great credit must also be given to the basic, bedrock logic of the railroads. . . .

Volumetric Efficiency. For every cubic inch of engin displacement, there is only about half as much oppo tunity for piston-cylinder wall friction in a giant railwa locomotive as in a highway truck.

Less Rolling Resistance. Whereas a flexing rubb highway truck tire resists movement with tremendou

Arrival of first train at new Pewee Valley, Ky., station on L&N in 1867

in a trap

friction and heat, nothing moves so easily as a steel wheel rolling on a steel rail.

Less Air Resistance. Whereas each highway truck must push its own air out of the way in front and drag along its own semi-vacuum at the rear, the close-coupled box cars of a freight train tend to travel through a "tunnel" in the air. This becomes more important as speeds go higher.

Manpower Efficiency. Whereas it takes hundreds of trucks and drivers to carry the equivalent of a trainload, the train has only one "driver."

Guided Movement. The key to modern mechanization—the one thing without which all of a factory's motors, tools, sensing devices, programming equipment, etc., would be utterly useless—is guided movement. This exists in the assembly line, the conveyor, the transfer machine, the guiding slides on which tool heads travel. Without guided movement, you're nowhere in factory automation—just as without guided movement you're nowhere in automated transportation.

"Automation" is one of those flip-flop words that is a villain one moment, a hero the next. As of now, with demand threatening to bump our production capacity ceiling, automation looks pretty attractive.

The aim of civilization is to reduce work in producing a given amount of goods or services, not make work. Fewer people must perform simple, mechanical-style functions that machines perform better and cheaper—more people must be efficiently applied to making things of which we don't have enough.

With its inherent and fantastically efficient guided movement system—its rails—the railroad is strongly qualified indeed to be *the basic mass transportation method of the future.*

But railroaders are not content to rest on the basic advantages of the train—they're developing new ones all the time . . . giant unit trains . . . new loading and unloading devices . . . a whole new spectrum of specialized cars . . . new signaling, communication, computerization . . . welded rail . . . new track maintenance machines. . . . new—you name it!

How do railroaders keep up with all this? Through weekly RAILWAY AGE. What a place to tell people what *you* are doing to help the railroads win out!

Be part of the weekly excitement in **RAILWAY AGE** *the transportation weekly*

GUS WELTY

LINES ON LABOR

THE STRIKE BEGAN, a few weeks ago, apparently without much warning. It came at a time when most issues had been settled through negotiation. Its cause was a familiar one: the desire of employees to win maximum protection in a merger situation. Labor stuck to its guns when management refused to give in on the specific demands. Management argued that the demand at the heart of the dispute was non-negotiable, that labor was asking something that was "legally as well as physically impossible." When the strike finally came, management called it "terribly inappropriate and most poorly timed."

THE WHOLE AFFAIR had a hauntingly familiar ring. It sounded like something that might happen, in an extreme case, in a railroad merger. Labor seemed to be taking the position that railway labor has taken—that is, maximum protection has to be provided, up to and including lifetime jobs for all concerned. Management's position seemed a little different—since, after all, this management was balking at the demands and railroad management in every recent instance has won union agreement by signing extremely liberal job-protection pacts.

MANAGEMENT, in the strike situation under consideration, tried its best to be reasonable. Management cited the "verbal assurances" it had made. Management cited its reputation, "earned by sincerity and integrity over the years." Management protested that labor was demanding "a successor clause to bind an organization which is now just an idea." Management challenged rank-and-file support for the strike. Many employees, a management spokesman declared, said verbal assurances were sufficient.

MANAGEMENT talked of the need for putting first things first. Management talked glowingly of the benefits of the proposed unification. Management pledged fair treatment, at the proper time. Management cited the benefits of the existing contract, which it termed "the best in the nation."

MANAGEMENT, in the end, took a strike—still defending its position, but virtually shutting down operations in keeping with "the trade union principles which this organization heartily endorses." "Labor" in this case was the Office and Professional Employes International Union, Local 425. "Management" was the Brotherhood of Locomotive Firemen & Enginemen.

High-speed train delay is probed by Senate group

Will those New York-Washington Metroliners be in service before 1969? There is no assurance that the high-speed electric multiple-unit cars will, according to a May 31 report issued by the U.S. Department of Transportation. Four days later at hearings on DOT's 1969 appropriation, conducted by a Senate Appropriations subcommittee, there were indications that an abbreviated Metroliner service might well be initiated in 1968.

Dr. R. A. Nelson, director of DOT's Office of High Speed Ground Transportation, conceded that he had been "largely responsible for holding to original 1967 starting dates" for the Northeast Corridor demonstrations, which are designed as a marketing study to determine the U.S. public's response to faster, more comfortable train service on medium-distance runs.

In an attempt to rush a fleet of the most complicated passenger-carrying rail vehicles ever conceived into demonstration service, Northeast Corridor planners chose to forego any prototypes. The production Metroliners which resulted have been plagued by technical difficulties. As of last week's hearing, however, Metroliner cars were operating experimentally on the entire PC New York-Washington line. A pair of the cars recently reached 164 mph on test and a six-car train covered the 68 miles between Baltimore and Washington in 46 minutes.

Veteran observers characterized the subcommittee hearing as "no witch hunt." DOT, Penn Central, Budd and electrical suppliers all made statements and submitted to questioning. "We want to make sure that when the demonstration program is started, it is started right," testified R. W. Minor, PC senior vice president. "The public may quickly forget a late start, but it will never forget a false start, prematurely initiated without assurance of the specifications being met completely."

Dr. Nelson explained that, in the project's early stages, there had been general agreement that preparation of PC's fixed plant and not the design and building of the cars would establish the dates for inauguration of Metroliner service. While the railroad finished the upgrading of its roadbed and refurbishing of its stations on time, the rolling stock has consistently been behind schedule. And, said Nelson, "If a top speed of 120 mph were acceptable, the

cars would be in operation today. The delay is due to the requirements for 150 mph sustained and 160 mph top speed."

DOT marshalled representatives of Penn Central, Budd, General Electric, Westinghouse Electric and OHSGT for its technical task force (RA, April 22, p. 21), which recently indicated it might take seven months to correct all the Metroliner difficulties. Staff members of all these organizations, along with consultants from the Federal Aviation Administration and National Aeronautics and Space Administration, aided in pinpointing the troubles. The task force is continuing to function in an effort to coordinate solutions.

Skyscrapers for IC lakefront property?

Where there's a freight yard now, there will someday be a yard of skyscrapers, according to developers' plans for Illinois Central lakefront property in Chicago. But IC's tracks will still be there—under a landscaped platform that will be "ground-level" for 70- to 90-floor buildings, including housing for 35,000 people, office space for 45,000. The area in question covers 50 acres of IC's Congress yard, and it will provide space for a development worth perhaps $1 billion.

A main issue now is whether the project can go up without walling off the lakefront. IC and developers say the lakefront will be preserved. The city says maybe, although it recently issued guidelines based on talks with the railroad and the developers.

The guidelines, however, give the developer the duty of drawing the exact limits on height, bulk and spacing, although the city can step in if necessary.

In line with that, there must be a revision of a 1929 amendment that tightened an old ordinance covering redevelopment of IC trackage area. The ordinance now must be loosened or adjusted to fit the super-development. However, the city wants the revision still to be tight, to insure fulfilment of the railroad's promises. IC wants a more loosely-worded ordinance.

Public improvements valued at $133 million would include a 100-acre expansion of Grant Park on land-fill into Lake Michigan, a new harbor and huge underground parking facilities. IC and the developers would pay for a third of this.

At the same time, the railroad may gain about $150 million from its air rights. Final city approval is expected late this year. One developer says construction will start early in 1969.

WALTER TAFT

WATCHING WASHINGTON

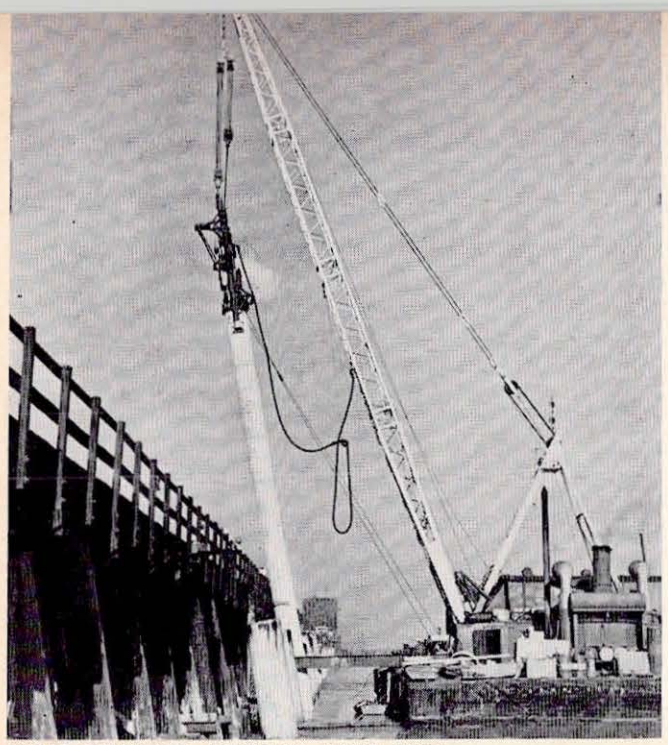
PASSING BUCK ON PASSENGER SERVICE—The ICC has referred the railroad passenger-service problem to its boss—Congress. It has recommended that interested Congressional committees hold hearings on the adequacy of that service. Committees to which the recommendation went are the Senate's Commerce Committee and the House's Committee on Interstate and Foreign Commerce. Indications are that they will be much interested in what the Commission has to offer, but no plan to hold hearings was announced.

PROBLEMS CITED—Commission Chairman Paul J. Tierney transmitted the recommendation to chairmen of the Senate and House committees—Senator Warren G. Magnuson (D.-Wash.) and Representative Harley O. Staggers (D.-W. Va.). He advised that the train-off and other pertinent provisions of the Interstate Commerce Act "can serve only a limited purpose" in any undertaking to cope with passenger-service problems.

WHAT'S NEEDED—If a new national policy as to railroad passenger service is to be formulated, it will require imaginative planning, research and development by railroads, governments and concerned members of the public, Tierney added. He also said the Commission is prepared to present recommendations.

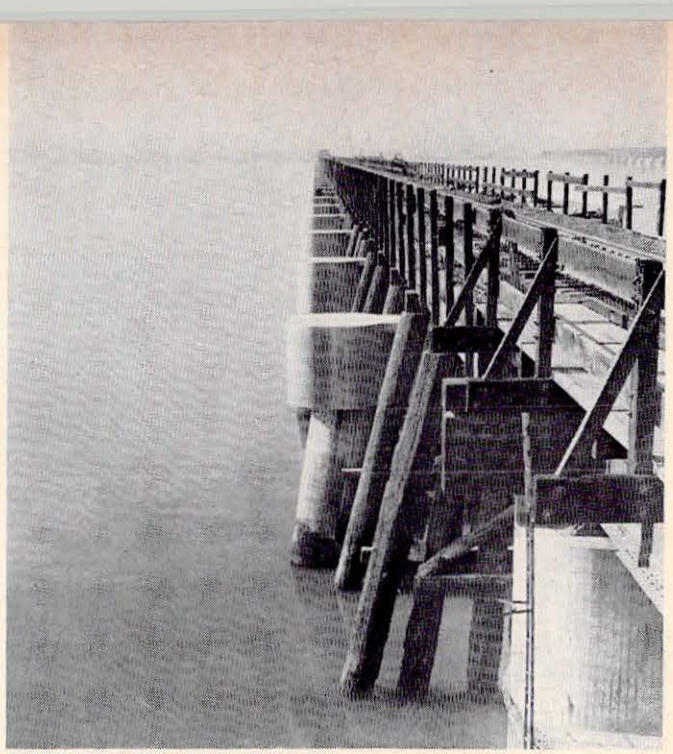
SOME HOMEWORK NOT DONE—The approach to Congress came before the Commission acted on the report wherein one of its examiners, John S. Messer, has parlayed a complaint against Southern Pacific service into a proceeding involving passenger service generally. Messer not only advises the Commission to require improved SP service—he recommends also a plan for development of a National Rail Passenger System (RA, Apr. 29, p.48).

NOT ENTIRELY NEW—Back in 1961, the Commission itself had a similar idea. Reporting on its investigation of New Haven operations, it called for federal subsidies to preserve "essential" passenger services. The proposed federal aid would have been related to aid received from states and municipalities, and its prospective cost was put at $52 million a year. The Commission followed through to make this proposal a formal recommendation to Congress in its next annual report. Congress received that report in January 1962. It did nothing, and the recommendation was not repeated in subsequent annual reports of the Commission.



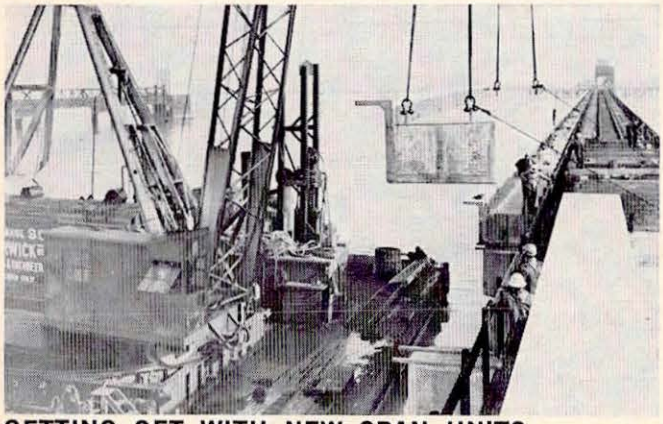
PILE DRIVING STARTS THE JOB

Barge-mounted pile driver positions two hollow concrete piles in each bent, clear of existing trestle.



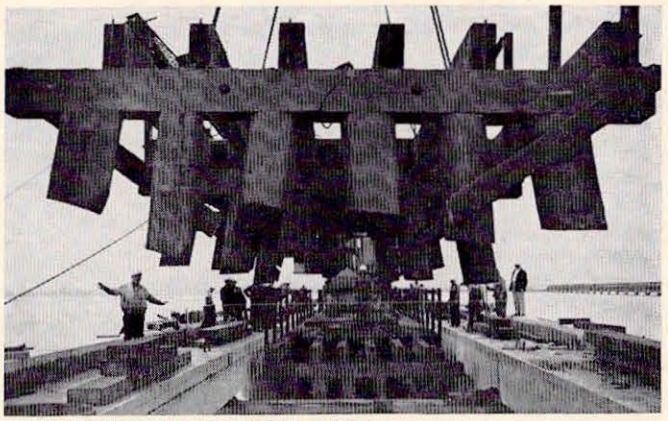
NEW BENTS ARE READY

Cap for each bent was placed in position after piles had been cut off at grade—without traffic interruption.



GETTING SET WITH NEW SPAN UNITS

Flat cars delivered precast concrete units for spans. Barge-mounted derrick set them in place on ends of bent caps.



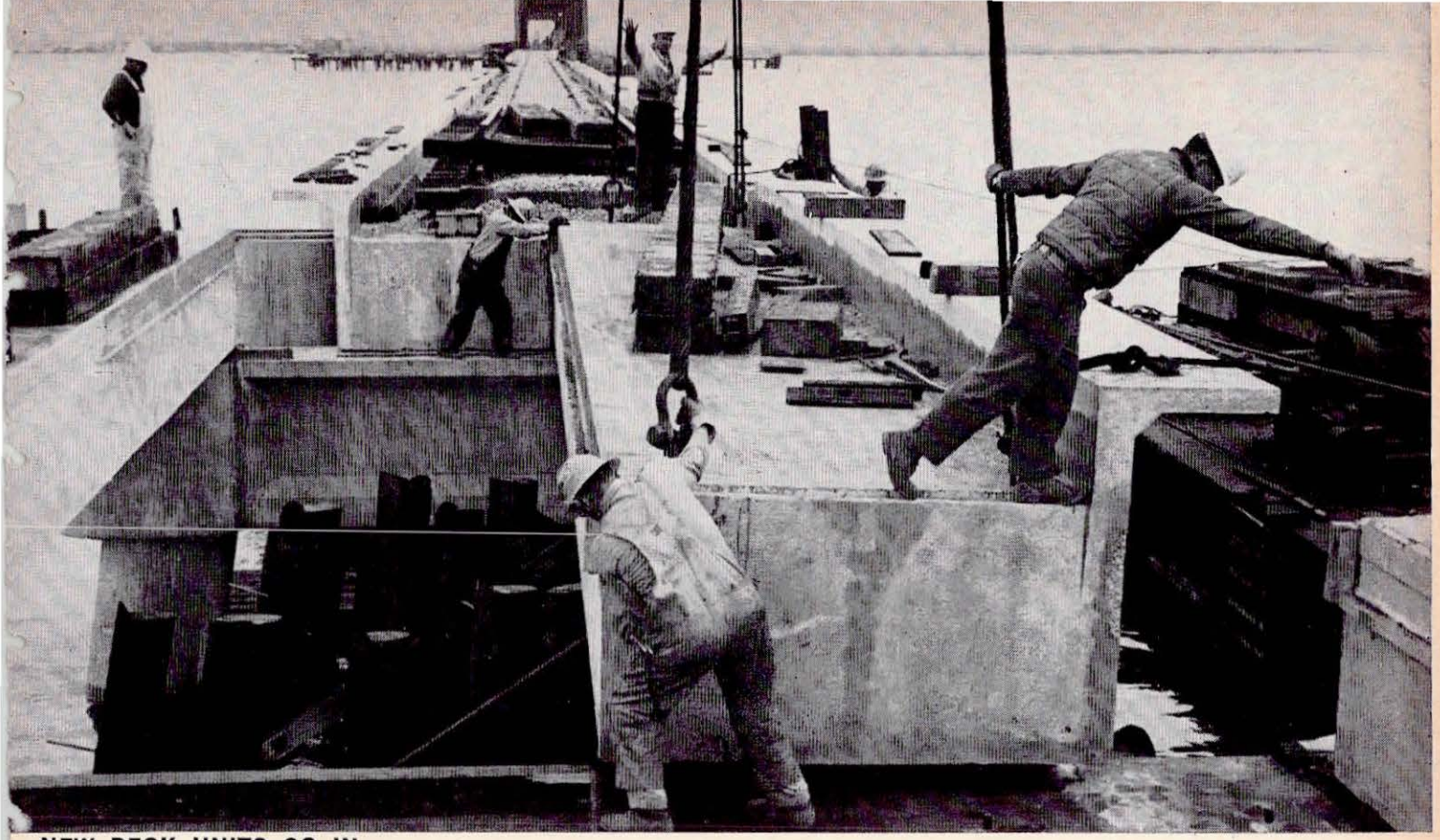
OLD TRESTLE COMES OUT

With track and ballast removed, timbers of old sections were cut and entire units removed.

A NEW BRIDGE GOES UP AROUND OLD ONE

Marine borers had done their work in some of the wood piles in the timber-trestle portion of the Southern Pacific's long Dumbarton bridge across San Francisco Bay. Replacement of these portions was required—but there were some problems to be overcome. Basically, the problems revolved around the fact that traffic had to be maintained over the single-track structure during reconstruction. Solution of the problem by constructing a new bridge on an offset alignment was out of the question.

● **How it was solved.** SP engineers solved the problem by coming up with a design for a structure, constructed entirely of precast, pretensioned concrete components, in which the substructure could be constructed in its entirety without interfering with the existing bridge or traffic over it. Basically, the new structure is of trestle-type construction. But the bents are of unusual design: They extend sufficiently beyond the limits of the old trestle on each side to permit the new spans to be placed on the ends of the bents before being shifted into their final position. This meant that the final

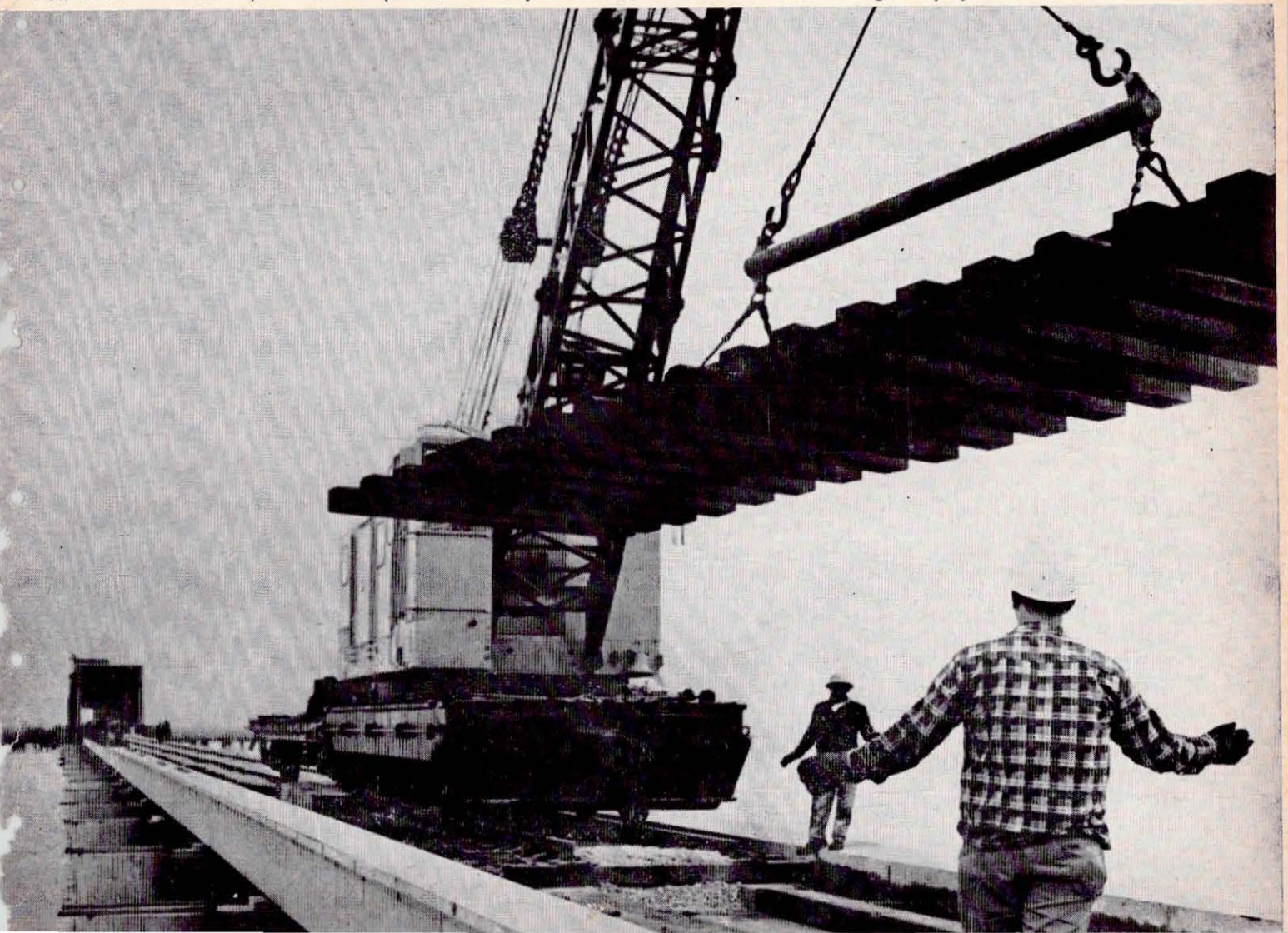


NEW DECK UNITS GO IN

Derrick on barge places concrete spans in position on new caps. Epoxy resin filled shear key between units..

TRACK PANELS ARE INSTALLED

New track was laid in pre-assembled panels. The only traffic interference was in final stage of project.



DELAYS TO RAIL TRAFFIC WERE HELD TO A MINIMUM

operations—removing the track and deck, placing the new spans and replacing the track—could be carried out quickly and with minimum interference with traffic.

The structure involved crosses the southern part of San Francisco Bay and is 7,559 feet long. The center portion consists of seven steel through-truss spans including a swing span. The approaches consisted of 6,037 feet of timber trestle in which the bents were on 15-foot centers. Marine-borer attack in the piling required that 2,762 feet of the approaches be renewed.

To meet the requirements of the site, the railroad designed a bridge consisting of 45-foot prestressed concrete spans supported on two-pile bents. The piles and the caps are of precast, prestressed concrete construction. The new bridge was designed for Coopers E-72 live load in accordance with current specifications of the American Railway Engineering Association. The length of the spans was made a multiple of the existing panel length so the new bents could be constructed in the clear of the old bents.

Each span of the new bridge consists of two hollow double-box units 6 feet 8 inches wide, 3½ feet deep and 44 feet 10½ inches long. A total of 60 panels (120 deck units) was required of this length, and there are two shorter panels (four deck units). The outer edge of each deck unit has a concrete ballast retainer curb and sidewalk.

● **Why two-pile bents.** Two-pile bents were selected so that one pile could be driven on each side of the existing trestle and at a sufficient distance from it so that train traffic could continue during pile-driving operations. The pile driving was carried out using floating barge-mounted equipment. The pilings are 48 inches in outside diameter and have a wall thickness of 5 inches.

The lengths of the piling were determined following a sub-surface investigation. This showed that there is a stratum of soft clay (bay mud) up to 40 feet thick underlying the bridge and then a sand stratum of varying thickness, under which there is a dense, stiff clay of indefinite thickness.

Where the sand thickness was sufficient (17 feet or greater), the new piles were designed as end-bearing piles with a minimum penetration into the sand of 5 feet. Where the sand was less than 17 feet thick, the new piles were designed as friction piles with a minimum penetration of 40 feet into the stiff clay. Design load for the piles was 200 tons per pile.

● **Test piles driven.** One friction and one end-bearing test pile were driven and load-tested to 400 tons per pile. Also, lateral pull tests were made on each test pile to determine the resistance to horizontal (seismic, etc.) loads.

On completion of the pile tests the decision was made that 70 piles would be friction piles with a length of 120 feet, and that 54 piles would be end-bearing piles with lengths varying from 62 feet to 76 feet. The friction piles were driven with open ends. The bottom halves of these piles were made of lightweight concrete to reduce the weight. Maximum weight of these piles was about 45 tons. End-closure plugs were inserted in the piles to be driven as end-bearing piles.

Caps for the bents are 31 feet long and 5 feet 3 inches deep. They are binocular-shaped in plan, being 3½ feet wide in the center portion and 6 feet wide at the ends. The piles and the caps were manufactured by Ben C. Gerwick, Inc., San Francisco.

Steam hammer used

In driving the piles, which were delivered to the site by barges, jetting was necessary in getting penetration of the friction piles into the sand stratum. The pile hammer used was a single-acting steam hammer having a 30,000-lb ram and developing 90,000 ft-lb of energy per blow.

● **Finishing the bents.** After completion of the pile-driving work the piles were cut off to grade and a precast concrete plug was placed inside each pile 10 feet below the cut-off, using an epoxy-resin adhesive. Using a floating derrick the caps were then installed, each being shoved underneath the existing deck and landed on the two piles of the bent. This was possible because the depth of the new concrete deck is greater than that of the timber deck.

A 15-foot length of wide-flange beam was inserted vertically through a rectangular block-out in the end of the cap and 10 feet into the pile. Concrete was poured to fill the top of the pile, embedding the steel-beam section and obtaining a rigid connection between cap and pile. After the concrete had hardened, the connection was pressure-grouted to ensure that no cavities or shrinkage cracks remained.

Following completion of the new bents, which were installed without any interference with or delays to train traffic on the timber trestle, the deck units for the new bridge were delivered to the bridge site by train. These units, manufactured by the Arizona Sand & Rock Co., Phoenix, Ariz., were lifted by a barge-mounted derrick and placed on the new caps alongside the trestle. This was done for the entire length of the bridge.

With the deck units in position on the bents, the contractor—Ben C. Gerwick, Inc.—was ready to install the units in their final position. In this work a rail-mounted crane removed a section of track from the trestle, a small bulldozer removed the old ballast from the deck, chain saws were used to cut off the bents of the timber trestle and the derrick lifted out a 45-foot section of the trestle intact and then placed it on a barge.

● **Installing deck units.** Next, the derrick lifted the new deck units for the span and placed them side by side on the bents. When both deck units were in place for a given span, the derrick would move 45 feet ahead to remove the next section and to repeat the installation procedure. Meanwhile, another crew was filling the shear key between the deck units just installed with epoxy resin. When this had been done, a rail-mounted crane installed the new track, which had been preassembled in panel form. During this operation it was necessary to restrict train movements over the bridge for a 6-hour period daily, although trains could operate the other 18 hours.

Why was prestressed concrete used in manufacturing the components for this structure? Spokesmen for the SP point out that the usual advantages of durability, fireproof nature and maintenance-free characteristics of such construction were of particular importance in this location. Moreover, they add, the ability of the concrete piling to carry the large design loads and to resist the horizontal forces (seismic, train braking, etc.) without cracking to permit entrance of salt water was of prime importance.

It was reasoned that prestressed concrete is the only material which could serve this purpose and still be light enough to permit the components to be handled with normally available equipment. They point out that the caps and deck units, if designed and manufactured of conventional concrete, would have been too heavy to handle and the resultant increased dead loads would have created foundation and stability problems.

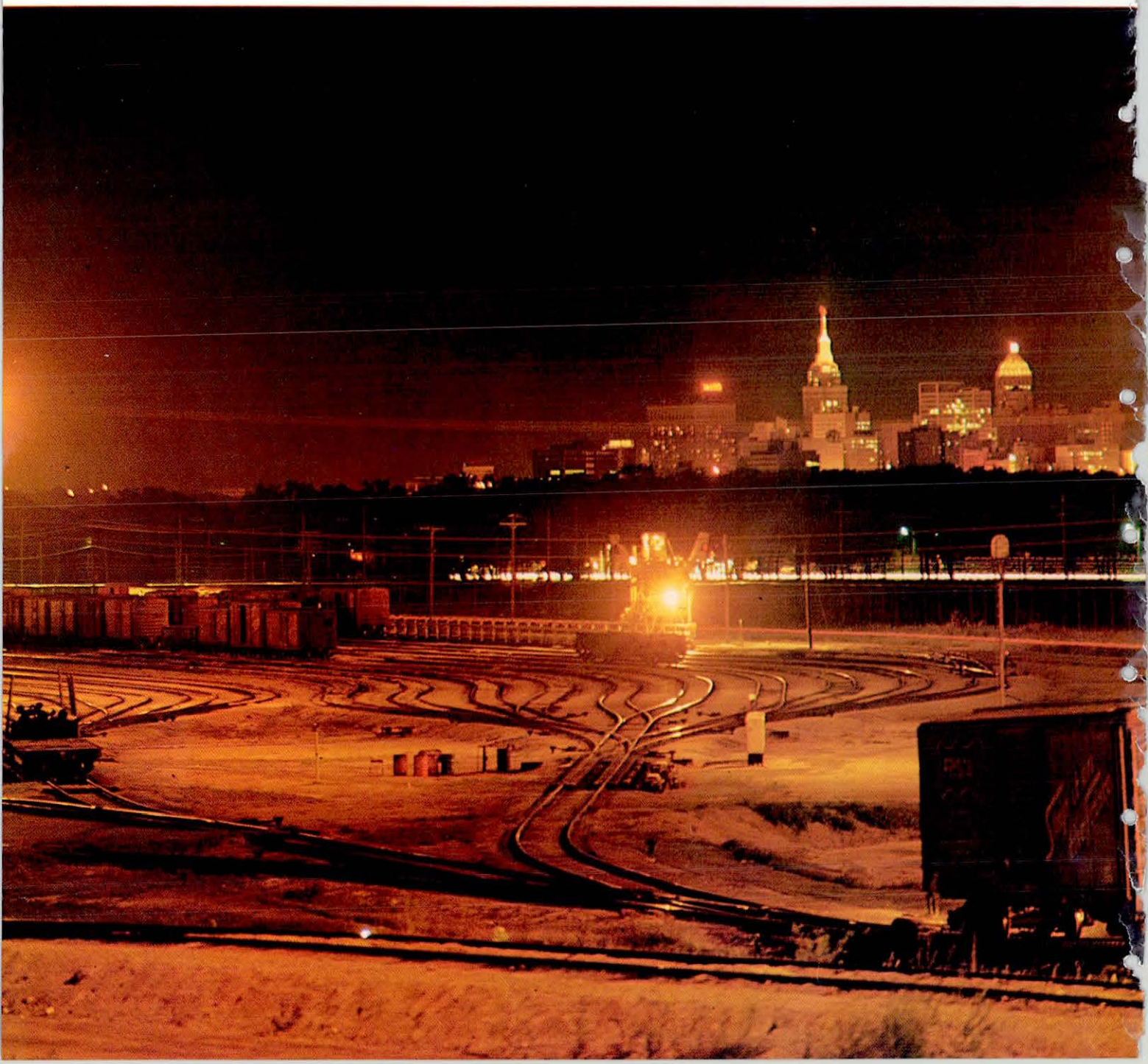
This project was carried out under the general supervision of H. M. Williamson, chief engineer-system of the SP, and T. L. Fuller, engineer of bridges. ■

RPI
RAILWAY
PROGRESS
INSTITUTE

we're looking for another winner! could it be you and your railroad?

Winner of Golden Freight Car, 1967

The St. Louis-San Francisco Railway won last year with program using computers (right) *to analyze car movements and expedite traffic. Time in terminals* (below) *was reduced 25 percent.* See Photo on Cover: *Frisco President J. E. Gilliland* (center) *receives Golden Freight Car from RPI Chairman W. Ashley Gray, Jr.,* (right) *and President Nils A. Lennartson* (left).



Is your railroad doing an especially good job of promoting freight business? Did somebody hit on a brand new idea which is paying off in better service and increased traffic? Are you getting very good results with a unique advertising campaign or marketing approach?

If so, now is the time to tell the world about it—and win the recongition you and your associates deserve.

Enter your program in the 1968 Golden Freight Car Competition sponsored by the Railway Progress Institute.

The RPI annually awards a Golden Freight Car to the railroad which, in the opinion of a board of impartial judges, has done the most effective job of promoting freight business during the previous year with a railroad's single program or the railroad's total marketing effort.

This year, for the first time, Silver Freight Cars will be given to runners-up as Awards of Merit.

Color movies will be made of all the finalists, and shown to top officials of industry, government and news media at the RPI's Annual Dinner in Washington, D.C., at the Sheraton Park Hotel, on October 24, 1968, when the awards are announced.

Copies of the films will be presented to winning railroads, along with their Golden Freight Car, or Silver Freight Car, for further use in your advertising or public relations programs.

The 1968 Competition is just beginning. An official entry blank, with the rules of the contest, accompanies this brochure.

The number of entries will show everybody concerned how many exciting things the managers of the "new railroads" are doing to help themselves and their customers. So the more entries, the better for our industry as a whole.

Any railroad, large or small, can win. In previous years, awards have gone to the Maine Central and Chicago & Eastern Illinois, as well as the Burlington and the Santa Fe.

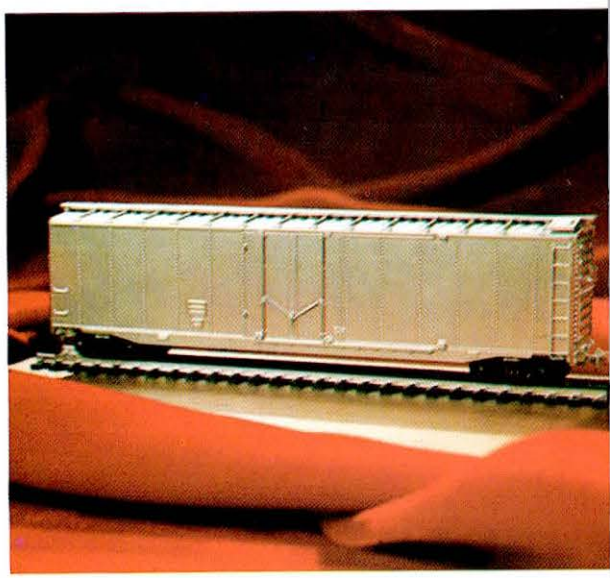
The judges, to be announced shortly, will evaluate all entries in terms of originality and effectiveness, percentage-wise. Actual results, in terms of increased earnings, savings or improved service, also count equally.

On these pages are pictures of last year's Award winners.

Next year, your picture could be here—and in the movies, and in many other places where the winners will be seen.

Don't delay. Enter today.

Introducing the Silver Freight Car



New Award This Year for Runners-Up

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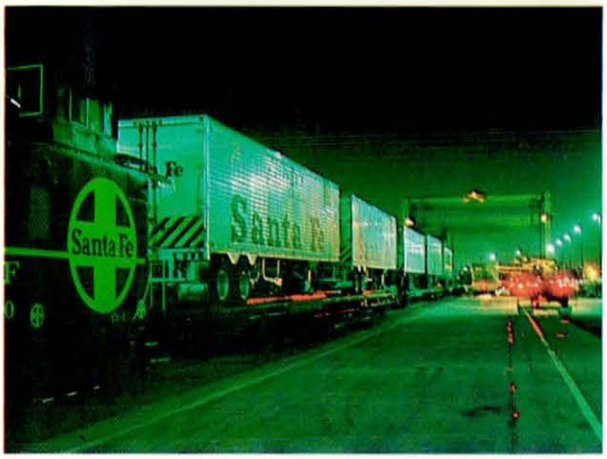

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'WP IS WILLING PEOPLE!'

Awards of Merit, 1967

1. New York Central pioneered in developing international container traffic using its Flexi-Van System.

2. Norfolk & Western promoted new "business logistics" concept in which freight trains function as integral part of shipper's physical distribution system.

3. Santa Fe's four point traffic development program included faster freight service between Chicago and West Coast, new routes to remote areas, modernization of terminals and very effective advertising.

4. Western Pacific emphasized human side of railroading with "WP is Willing People!" campaign.

RPI
RAILWAY PROGRESS INSTITUTE

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IMPROVED METHOD of repairing rail ends feeds wire-type electrode from reel through flexible conduit to a welding torch.

Rail ends get restored fast

Electric-arc repairing of battered rail ends uses wire-type electrode with automatic feed.

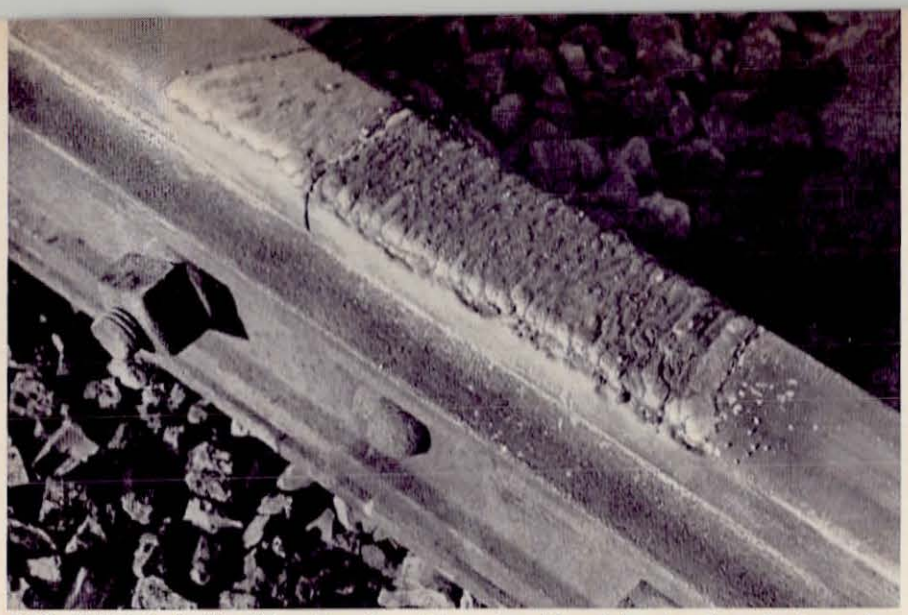
Efforts to mechanize track-maintenance operations have been extended to include building up of battered rail ends by welding. These efforts have included the introduction of a semi-automatic electric-arc method of making such repairs. It is semi-automatic because the power supply and the feed of the electrode are automatically controlled.

The method uses a flux-cored wire electrode fed through a flexible conduit to and through the curved welding torch. It was first announced by the Linde Division of Union Carbide Corp several years ago. Recently, the method has been improved by research and development.

Two wires are now offered. One of these, Railrod 1-A, produces a deposit with an average hardness of 350 Brinnell, considerably softer and more ductile than welds made with the original wire. This wire is recommended for regular rail-end build-up work, using 700 deg F preheated and no postheat. When the material has been work-hardened by traffic the hardness is reported to increase to an average of 385 Brinnell.

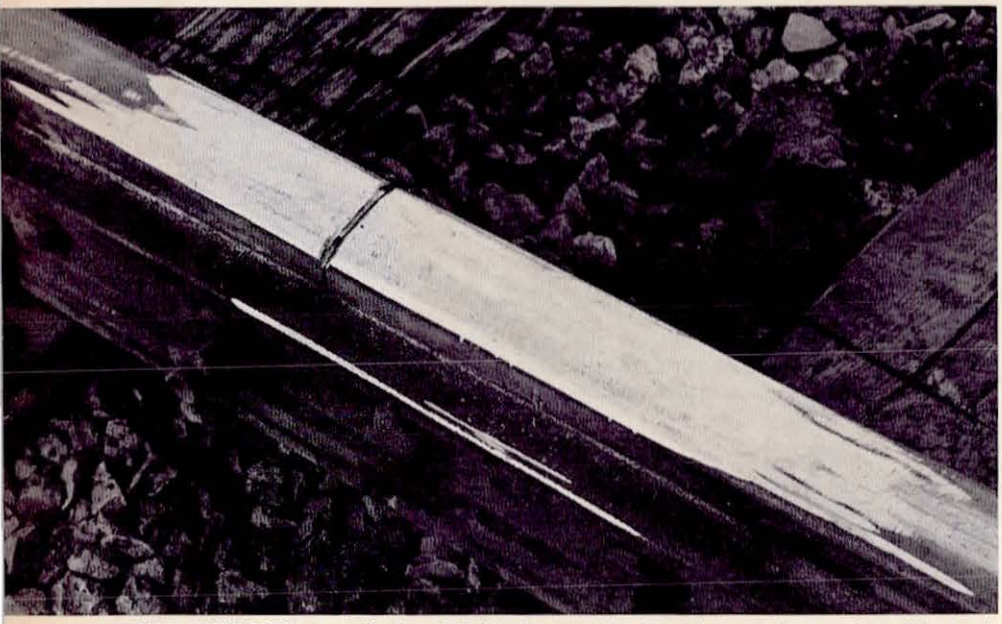
The other new wire, Railrod 1, with a composition similar to 1-A, is for use where slightly greater hardness is required. Thus, says a spokesman, it is applicable for use in building up such items as open-hearth frogs. Also, if it is the practice of a road to post-heat welds it might want to select Railrod 1

PORTABLE, TOO—Wire-feed unit can be carried from one rail joint to the next.



RAIL ENDS look like this after deposition of weld metal using the wire-type electrode. Slag has come off short part of weld, still adheres loosely to the long part.

Before and after the finishing touch



AFTER GRINDING, repaired rail joint is smooth. Test installations using this technique are all reported to be giving satisfactory service.

for regular rail-end build-up work in open track. In that case the company says the welds will have about the same hardness as welds made with Railrod 1-A that are not post-heated.

● **Field tests.** The installations of Railrod 1-A or a prototype wire of essentially the same composition are under observation in main-line tracks on several railroads. The oldest of these is on the Norfolk & Western near Altavista, Va. The welds were made in June 1964. There are 28 joints in this installation. It is estimated that the welds have carried over 200 million gross ton-miles of traffic.

Other test installations include seven joints on the Union Pacific at Cheyenne, Wyo., made in January 1965; 31 joints on the Penn Central at Goshen, Ind., made in February 1967; and 50 joints on the Illinois Central at Cairo, Ill., made in August 1965.

● **Satisfactory results.** All joints in these installations are giving satisfactory service, it is reported. Rolling-load tests have also been made at the AAR Research Center. These tests indicate that the performance of the welds has been satisfactory.

In semi-automatic welding using a wire-type electrode, control of the power supply and the wire feed is automatic, but the torch is manipulated by hand. In seeking to perfect a system of this type for building up rail ends, Linde had several points in mind, all aimed at producing better welds at less cost. One point mentioned by a spokesman is that the deposition rate for this type of welding is usually higher than when welds are made manually by other processes. Another point is that, since the wire is fed continuously, more effective use is made of production time. It is also pointed out that, because the welding operation proceeds continuously, there is no discontinuity in the heat and deposition patterns of the weld.

The final point made is that, with semi-automatic welding, it is possible to obtain satisfactory welds with welders who are less skilled in the trade. This point is considered particularly important now because of the difficulties being experienced in obtaining highly skilled welders.

● **Functions of the core.** The Railrod wire-type electrodes are delivered in coils weighing 50 to 65 lb. Materials in the cores of the wires perform three functions. One function is to alloy with the steel in the outer shell to obtain the desired metallurgy of the deposit.

Another function is to produce gases which have the effect of shielding the welding arc and the weld puddle. Hence, the wires are known as self-shielding electrodes. The third function is to combine with any impurities in the weld puddle to form slag which floats to the surface.

● **Typical organization.** The principal units of equipment in a typical set-up for making semi-automatic welds with flux-cored wire electrodes consist of a gas or diesel-engine-driven welding generator and a unit for feeding the wire to the welding torch. The wire-feed unit can be carried by one man. It contains a reel of wire and a motor which automatically feeds the wire through a flexible conduit about 10 ft long to and through the welding torch in the hands of the welder. The only manual controls involved are a dial on the wire-feed housing (used to control the length of the arc) and a dial on the power-supply unit for setting the welding current.

A typical gang for building up rail ends with the Railrod electrodes consists of a foreman, a welder, two grinder operators and two or three men, basically laborers, who act as helpers and perform other supporting jobs. Average performance of a crew of six men is said to be about 90 joints per day with the Railrod equipment.

With Railrod 1-A it is estimated that the average cost of making welds is $0.27 per inch, which includes $0.21 for labor (25% added for overhead), $0.03 for the wire, and $0.03 for other consumables. ■

IC's NEW PURCHASING EFFORT will be handled by, left to right, Harry C. Miller, director; R. W. Forsell, manager of purchases; and C. L. Foust, manager of materials.

Can P&S spell profit for the IC?

The road hopes its revamped purchasing department—as a promoter of first-class service—will do just that.

The question may sound strange—what is a purchasing department? As everybody knows, the department service role swings through railroad history with the force of a 90-ton crane. A few months ago, however, Illinois Central decided that such a question squarely fit its nothing-for-granted purge of long-accepted axioms. IC reckoned that the answer could mean the difference between money wasted and money earned. Consequently, the purchasing function was laid out in its traditional form and dusted for profit prints.

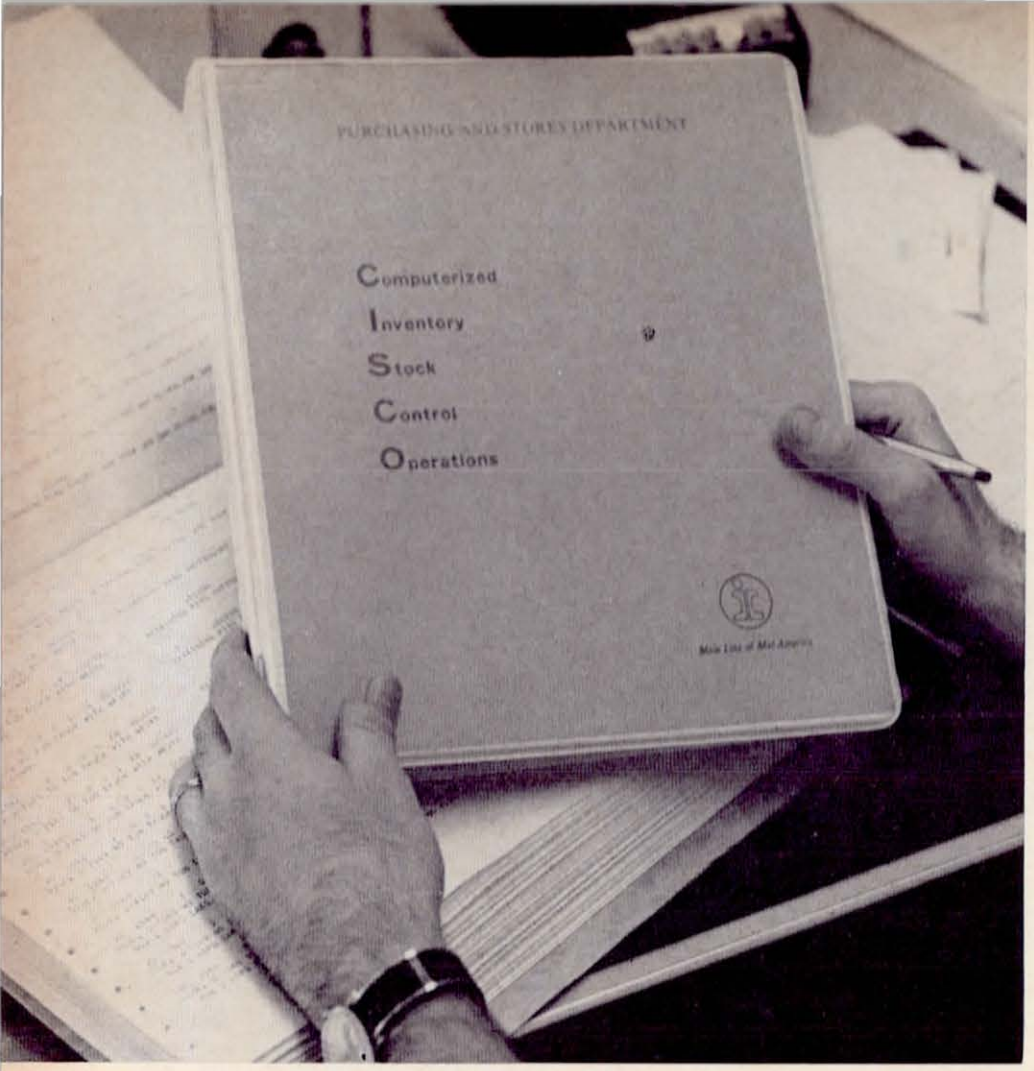
The examination centered on this: Does purchasing merely serve the railroad by ordering, distributing and paying for materials—or can it be a more lucrative management tool for planning and steering the actual use of what it pays for?

- **New emphasis.** IC's answer leaned toward the broader interpretation. The result is a new department name, a new emphasis and an imminent new look. The former purchases and stores department now is known as purchases and material. Its men have new titles that make the nature of their duties as clear as the thinking that charted the change. The emphasis has switched from the mere handling of stock to the promotion of first-class service—from the vendor as well as to the using department. And from all this will come the hoped-for new look, the image of a railroad profit center.

The director of the re-shuffled purchasing pack is Harry C. Miller, who says the goal now clearly is to help brighten the company's profit picture. The service function still will be the main target of activity, but from a bullseye will come the cash that makes profit-center operation desirable, Miller says: "In other words, the rate of profitability for the railroad from this department's operations will increase—as user departments benefit from imaginative buying practices, more efficient handling of materials and more precise delivery dates."

- **Buying practices.** The buying process will get one of the hardest looks. This falls in with the move to get better service from suppliers. As Miller puts it, "We in purchasing are able to measure the effectiveness of our buying performance by comparing costs with results. Careful buying is basic. We really are after more effective buying procedures."

One thing he is looking for is "more sophisticated" buying techniques in the forms of contract buying and consignment buying. Right now, IC's buying is done on the inquiry-and-bid basis. Contract buying will mean that the supplier could gain a more stable production run and a smoother flow of business. For IC, it could mean a predictable flow of materials and price stabilization for longer periods despite rising



A MOVE TOWARD COMPUTERIZATION

A training manual on Computerized Inventory Stock Control Operations (CISCO) above, and a master file of what's on hand throughout the IC system (with costs) are IC steps toward full computer application.

costs, Miller says. And under the consignment system, the railroad would gain instant availability of materials and reduced inventory. Here, the supplier simply would put a quantity of his material on the property so stock would be there when needed—and the railroad would pay for just the amount used.

The campaign for better buying is rounded out by a re-emphasis on what Miller calls the quality of being "a little more aggressive." This would mean taking the offensive in purchasing rather than employing merely defensive techniques. "We want to be sure that when it seems we don't have any choice about the price, that we really don't. And we would like to be confronted with fewer such situations."

• **Schedule coordination.** One form of taking the offensive would be to link suppliers more closely with the lead-time needs of railroad users. "If they tell us nine weeks, and we plan our project around that time figure, then they deliver in 17 weeks, our programs are thrown off balance," Miller says.

That idea of setting schedules closer to lead-time works both ways. If "more realistic" delivery time is expected from the supplier, the purchasing department has to obtain realistic demands from the using department, Miller says. "We've got to get our own people to be a little more realistic about their own plans, the availability of what they require, and the length of time it takes to get it. Forcing others out of their standard practices costs extra cash. We want to minimize this."

Getting your money's worth

It adds up to a new move to improve IC's inventory management, to get better distribution of what the company has. "Improving distribution is as important as lowering prices and lowering handling costs," Miller says. That move includes the revision of Illinois Central's P&S manual, a new training effort, freeing the department from certain unrelated activities and an attempt to get the most from related activities, such as scrap disposal.

"Equally important as careful buying is getting our money's worth from materials we already have. This is especially true with today's rising costs. Any time the railroad does not have to buy something, those unspent dollars can show up right in the profit line on the balance sheet," Miller says. What the railroad already has adds up to more than $100 million worth of materials—$57 million for regular stocks and $50 million for new equipment.

• **Computer will come.** Another part of the new move toward improved inventory managment is data processing. However, of all the elements in Miller's campaign, this is the most out of reach, now. Right now, IC's MAIN Central computer center in Chicago is busy with just about everything else but purchasing. Priorities are aimed at current operations. But, although there is no definite date for plugging purchasing in to MAIN Central, Miller says his department's work will be phased into the computer in parallel with operating programs now on the MAIN drawing board.

His department does use the computer for one task, to charge out materials. The machine charges material to the user through a transfer of charges showing exactly what was used and how much it cost. Miller hopes the computer eventually will produce purchase orders, tell when it is time to buy and just how much material is needed, check purchase-order invoices and provide instant recall of information on the current inventory situation. In addition to charging out purchases, the computer also provides some reports on stock status, but "these reports certainly aren't frequent enough," Miller says.

The headquarters purchasing staff numbers 33, as it did before the regrouping. Now, "We want to know how many and what kinds of people are needed. We are taking a more in-depth look at what we need to do and why we have to do it. When we know, we can reshape operations so as to make the best use of our strength," Miller says.

And those title changes? Miller's former title was general purchasing agent. His new title of purchasing and materials director leaves no doubt about his place in the department. Other title changes include manager of materials instead of manager of stores, district materials superintendent instead of district storekeeper, and materials supervisor instead of storekeeper.

By the time the computer is ready to take on the full load of purchasing work, Miller expects to have his force ready. While waiting for his turn with MAIN Central, he is shaping his department into a lean, efficient candidate for computerization. ■

RSMA sifts key problem of quality control

Chicago meeting hears that the best business-getting method is to give unequalled service.

"HERETIC's" VIEWPOINT

Railroad marketing efforts are aimed at the wrong targets, says self-styled heretic William Bamert (left). Bamert, C&O/B&O assistant vice president-marketing, says railroads must find a reliable method of measuring service quality the way the customer does—by how long a car takes from shipper's to receiver's siding.

The measure of rail service is the car, not the train. Shippers judge by the way railroads move shippers' cars. That's how rail managers should judge, too. The super-train and the super-information-system are worth boasting about only if they are bases for super-car-handling. When rail marketing comes up, customers definitely want to hear what railroads can do—with customers' carloadings.

No matter how it's put, that was the verdict reached at a program on the measure of railroad freight service sponsored by the Railway Systems and Management Association May 27-28 in Chicago. Both rail men and shippers were in the jury. More than 120 railroad representatives heard their deliberations, and this was no mutual-admiration society meeting.

RSMA's panelists and participants were not there to trade compliments but to seek out problem areas and to try to develop answers to the many service questions that could be raised.

● **The railroad heretic.** Calling himself a heretic, William Bamert, assistant vice president-marketing, Chesapeake & Ohio / Baltimore & Ohio, told the group that rail marketing efforts are aimed at the wrong targets. What rails must market is quality service across the board "and not just for their glamour boy," Bamert said. The novel concepts have produced gains all right, but "why, in the face of these gains, do railroads just hold their own?" Because the gains of the "dramatic new" are offset by the "undramatic losses" of the old box-car traffic that doesn't change.

Consequently, it does small good to talk about trains that go 70 miles an hour—with yesterday's cars.

Railroads must find a reliable indicator to measure service quality the way the customer does, and the customer measures by how long his car takes from shipper's to receiver's siding. That means railroads must think of service beyond their own boundaries.

And what of the information systems being bandied around? The customer now may get more information than the vice president has at his own fingertips, because of the establishment of super-information systems. But, "Philosophically, it may be completely absurd," Bamert said. What good is information without service, good information on bad service? he asked. Railroads have spent millions on systems, but still have no measurement really tuned in to the customer's way of thinking, he said.

Tracing, Bamert pointed out, was established by customer demand, not by rail initiative. From the same demand must come a measurement that is an integral part of management control. Rails must not only draft a yardstick, they must use it, too.

"Myopia" interferes

Blocking that development, Bamert says, is a "myopia on the relationship between operating costs and freight service." Emphasis had been on train-mile costs, and cost-control reports have outpaced quality-control reports. Define the market first, worry about the cost second, Bamert said. In the marketing format, the basis for competitive pricing and selling of the rail product is a corporate climate that places the burden of proof on the operating department, not the traffic department. Management must look for operating "elasticity," Bamert said.

Was he really as pessimistic as he sounded? "Heretics don't usually espouse hopeless causes," Bamert said. But as a member of a group that met in 1960 to lay a foundation for rail quality control, he said, "don't let another eight years go by with as little progress as we've made in the last eight."

● **The shippers agree.** Four representatives of major rail customers upheld Bamert's verdict. There were John S. Vitz, Quaker Oats' general traffic manager; J. B. Carnahan, Armour & Co. vice president-transportation and distribution; W. K. Smith, General Mills' transportation director; and J. W. Cameron, Union Carbide traffic services manager.

For the food industry, reliable service means reduced inventory. And "there just isn't enough profit in the grocery business to allow inflated inventory costs from poor rail service," Vitz said. Although Quaker Oats still uses railroads for 87% of its traffic (formerly 100%), Vitz warned, "If I were you I'd be more worried about the trend than by the absolute figures."

Estimates for one distribution center show that Quaker could have made a 12% cost reduction last year if rail service had been better: "Cost of rail service is 12% less valuable because of other costs." Quaker's biggest complaints are that rails are slow to notify about delayed cars and nearly silent in talking about bad-order cars.

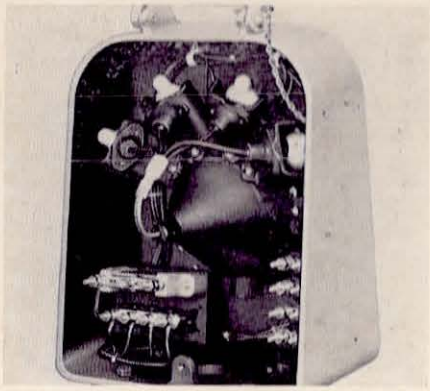
But the biggest gripe is rails' criteria for evaluating their own service. "What I want to know is when my *car* arrives. We evaluate your service by how you move our cars, not your trains."

● **Armour cuts rail use.** Rails are losing even more traffic in the meat processing field, Carnahan said. Armour now ships 60% of its products by motor carrier, and the trend will continue away from the railroads "because of service." He added that 30% goes piggyback, so the rails aren't losing entirely.

Again, the greatest need is for a reporting system that tells the shipper and receiver what cars will not arrive on schedule. Right now, many shippers are "confused" by rail policy in handling cars that are off-schedule. Some-

(Continued on page 37)

NEW PRODUCTS REPORT

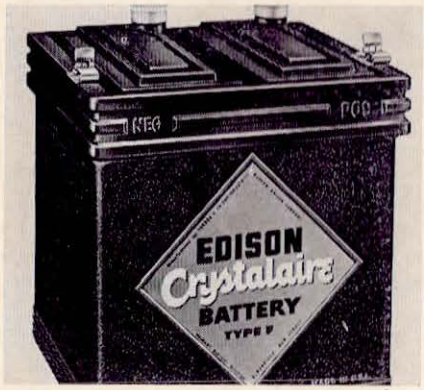


Colorlight signal (RA-1)

A new concept in wayside color-light signal design which requires only one lens to transmit all color aspects and indications is made possible by utilizing fibre optics for light distribution and transmission. The Unilens color-light signal utilizes approximately 75% of the lamp output. Optimum safety and reliability is claimed because there are no moving parts in the Unilens color-light signal. False proceed indications due to faulty or damaged mechanism are eliminated because there is no mechanism. Hence, repeating relays and associated circuitry are unnecessary.

The light source is protected by cast aluminum compartmentization. Should the high impact lens be broken by vandalism, the signal indication is still prominently displayed. The unit weighs 33 lb.

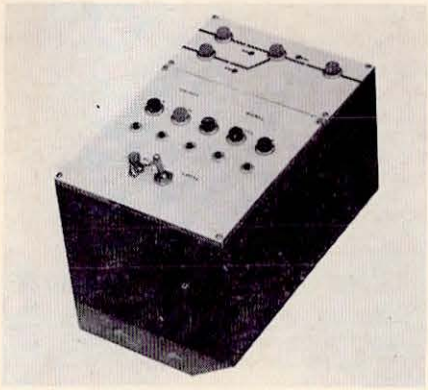
The Unilens colorlight signal can replace multi-lens colorlight signals with no change in wiring or circuitry. It is available for mast, bridge, bracket or dwarf signals. *Railroad Accessories.*



Primary battery (RA-2)

A new add-water carbon battery, type F, uses a unique system to dispose of the normal zinc electrode reaction products. Basically, the system involves crystallization of reaction products on feather-weight fibers in the lower part of the battery, away from the electrodes. The Crystalaire is easily and quickly activated; has extremely uniform voltage and has complete reliability of operation over a wide range of temperatures.

The type F Crystalaire has a normal voltage of 2.5 volts and is rated at 1300 a.h. with up to 10% reserve capacity for emergencies. The recommended maximum continuous current of the type F is .250 amperes. In the very low temperature ranges, such as —40F deg., it will sustain a continuous current of .100 amperes for six months or more at an average voltage of about 2.35 volts. Type F Crystalaire battery is the same size as the types 2-S-J-1 and 2-S-L-2 Edison Carbonaire batteries. *Thomas A. Edison Industries.*



Local control (RA-3)

A local control panel for single-track CTC consists of a small box 6 inches x 9 inches x 5 inches, provided with a plastic top plate having two pushbuttons and two indication lights for the switch, three pushbuttons and three indication lights for the signal, and a local remote sealed toggle switch.

The track model is a separate section which has a plastic sheet on each side with three track lights. The lights snap into the track model merely by pushing them through holes provided for this purpose. The track model section can be turned end to end or upside down by unsnapping the lights and snapping them into the holes from the bottom, thus providing the four possible arrangements of an end of siding.

A sheet of plastic pressure adhesive tags is provided which can be imprinted with a pencil, sprayed, and applied above the switch, signal or track lights, thus "custom building" the local control panel for any type of location. *Transcontrol Corp.*

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PLEASE SEND ADDITIONAL INFORMATION ABOUT PRODUCTS IN ADVERTISEMENTS NUMBERED: 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

PLEASE SEND INFORMATION ABOUT PRODUCTS DESCRIBED ON PAGE 26 MARKED: RA-1 RA-2 RA-3

NAME ..... TITLE.....

COMPANY .....

ADDRESS .....

CITY ..... STATE..... ZIP.....

● Inquiries can be processed only if title and company are shown. 6/10/68

J. E. Shaffer
C&NW

A. M. Handwerker
C&NW

John A. Clark
GTW-CN

Francis A. Danahy
LI

PEOPLE

BURLINGTON.—C. S. Morton, manager of forest products, retired June 1 after more than 37 years' service.

CANADIAN PACIFIC.—J. A. Webster appointed administrative assistant to vice president, Prairie Region, Winnipeg, succeeding **S. Gibbons,** retired.

R. A. Whitman appointed division engineer, Laurentian Division, Montreal, succeeding **J. A. Shearer,** resigned.

CHICAGO & NORTH WESTERN.—J. E. Shaffer appointed assistant vice president and director of industrial development.

A. M. Handwerker, assistant to the vice president-finance, named director, cost and budget administration.

CLINCHFIELD.—J. A. Goforth, maintenance engineer, Erwin, Tenn., appointed assistant chief engineer.

DETROIT, TOLEDO & IRONTON.—George A. Petersen, manager data center training, Dearborn, Mich., appointed marketing manager—iron and steel, a newly created position.

GRAND TRUNK WESTERN-CANADIAN NATIONAL.—John A. Clark, co-ordinator of freight service development for the system, appointed superintendent, Detroit division, **GTW,** Milwaukee Junction, Mich., to succeed **John G. Walker,** named special assistant to the general superintendent of transportation, Detroit.

John A. Goodfellow appointed industrial development officer, GTW, Detroit. He was previously industrial development representative, **Central Vermont,** Bellerville, Ont.

LONG ISLAND.—Francis A. Danahy appointed chief mechanical officer, Jamaica, N.Y., succeeding **J. Brannan,** resigned. Mr. Danahy formerly was chief mechanical superintend-

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Circle 6 on coupon page 26

Charles L. Schiffer
Milwaukee

Robert C. Duffin
M-K-T

J. R. Macanally
UP

R. F. Pettigrew
UP

N. B. Marvin
UP

C. O. Showalter
UP

ent—locomotive, **Penn Central** and **New York Central.**

MILWAUKEE.—Charles L. Schiffer, assistant treasurer, elected treasurer, to succeed **Charles T. Lannon,** who retired May 14 after more than 50 years of service.

William R. Hayghe, traveling freight and passenger agent, Philadelphia, named assistant to vice president-sales and service, Chicago.

MISSOURI-KANSAS-TEXAS.—Robert C. Duffin, general sales manager, promoted to assistant vice president-sales and services, with headquarters remaining at St. Louis. Mr. Duffin's former position abolished.

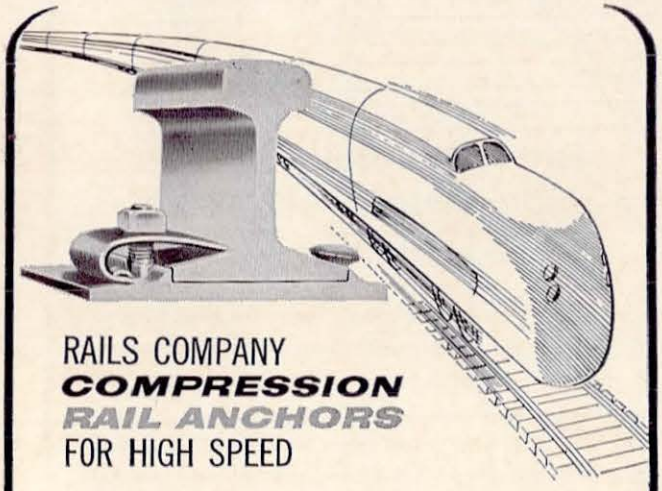
NEW YORK SUSQUEHANNA & WESTERN.— Officers elected April 25: **Irving Maidman,** chairman of the board and president; **John D. Kerwin,** vice president and comptroller; **Raymond T. Hordern,** vice president—traffic; **William A. Logan,** secretary and treasurer; **Catherine A. Lyons,** assistant secretary; **Robert Maidman,** assistant treasurer; **Michael T. Staub,** general manager; and **William Speegal,** auditor of revenue and disbursements (in addition to office manager).

William T. Frazier appointed vice president—operations and maintenance. On May 11 the position of superintendent was abolished. **J.E. Jones, Jr.,** appointed chief dispatcher.

NORFOLK & WESTERN.—John P. Monks, general manager—sales, **Akron, Canton & Youngstown,** Akron, Ohio, joined the N&W on April 16 as general traffic manager, Roanoke, Va. **Donald W. DeVore,** traffic manager, Cleveland, promoted to assistant to vice president—traffic, Roanoke, succeeding **Ralph W. Bonbrake,** retired. **Leo J. Paternoster,** traffic manager, Chicago, promoted to assistant general traffic, Roanoke, promoted to traffic manager, administrative assistant to vice president-traffic, Roanoke, promoted to traffic manager, Detroit, Mich., succeeding **George W. Fischer,** who succeeds Mr. Paternoster. **Theodore A. Theohar,** assistant traffic manager, Detroit, promoted to traffic manager there. **Gilbert E. Paul,** manager, special services, transportation department, succeeds Mr. Coffey.

PIEDMONT & NORTHERN.—N. S. Fisher, auditor disbursements and assistant treasurer, elected treasurer and general auditor, Charlotte, N.C., succeeding **A. C. Moore, Jr.,** who retired May 31 after 46 years of service. **J. L. Wallace** succeeds Mr. Fisher as assistant treasurer.

ROCK ISLAND.—C. R. Hurt, superintendent, Missouri-Kansas division, Kansas City, Kans., transferred to the Southern division, El Reno, Okla., to succeed **Oliver R. Thurston,** who becomes superintendent, Des Moines Division, Des Moines, Iowa. Mr. Thurston succeeds



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James E. Norris
P-S

William C. Hoenig, who has been transferred to Kansas City, to replace Mr. Hurt.

John Hooks, assistant regional manager-pricing, Chicago, retired May 31.

SEABOARD COAST LINE.—Dr. Southgate Leigh, Jr., chief surgeon, granted a leave of absence pending retirement on Sept. 30. **Dr. Adney K. Sutphin** named chief medical officer, Jacksonville, Fla., in charge of the system's Medical Department.

SOUTHERN.—Theodore H. Field, Jr., traveling storekeeper, appointed general storekeeper, remaining at Washington, D.C.

Julian A. Cline, assistant superintendent, promoted to superintendent, joint facilities, with headquarters as before at Washington.

UNION PACIFIC.—J. R. Macanally, vice president—traffic, elected to the newly created position of senior vice president, Omaha, Neb. **R. F. Pettigrew,** assistant vice president—traffic, succeeds Mr. Macanally. **N. B. Marvin,** assistant vice president—sales and service, elected vice president—sales and service, Traffic Department. **C. O. Showalter,** assistant vice president—rates and divisions, elected vice president—rates and divisions, Traffic Department. **R. C. Pretti,** director of cost and economic research, elected vice president—marketing, a new post within the Traffic Department. **R. J. Clark,** assistant director of cost and economic research, succeeds Mr. Pretti. **A. O. Mercer,** general auditor, appointed assistant to the president. **C. D. Mayer,** senior assistant general auditor, succeeds Mr. Mercer as general auditor. **G. E. Jensen,** assistant general auditor, named senior assistant general auditor.

R. W. Holland, office assistant to the president, Omaha named to the newly established post of general superintendent, South-Central District, Salt Lake City, Utah.

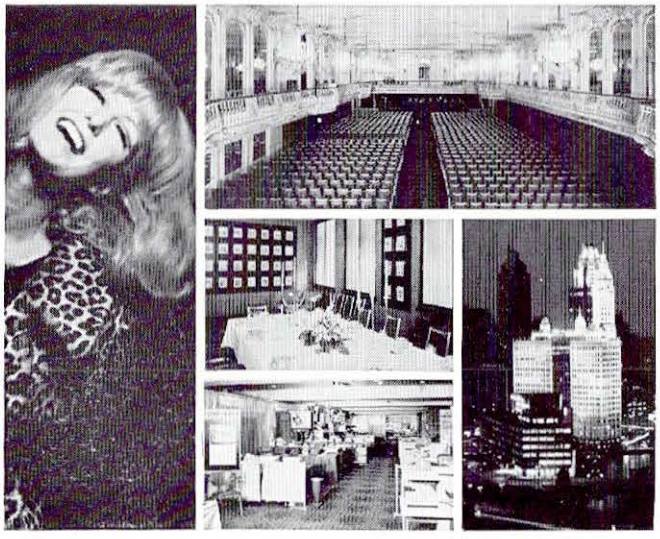
SUPPLY TRADE

James E. Norris has been named director of manufacturing, **Pullman-Standard Division** of **Pullman Incorporated.** Mr. Norris was previously manager of works of the company's Michigan City, Ind., and Hammond, Ind., plants.

J. W. Stickle, Jr., supervisor of tank car records and accounting, **Mobil Oil Corp.,** has been named superintendent of tank car maintenance at Kansas City, to succeed **F. A. McCurdy,** who has retired after more than 36 years of service.

OBITUARY

Frank J. Casey, 71, retired purchasing agent, **Milwaukee,** died June 1 in La Grange Community Hospital, La Grange, Ill.



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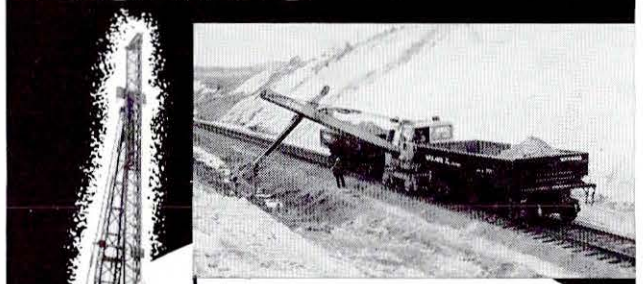

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LETTERS

Golden Spike Centenary

Los Angeles, Calif.

To the Editor

I tend to agree with Professor Heppner's suggestion [RA, May 6, p. 29] that, during the upcoming Golden Spike centenary, railroads might well capitalize on their "long, romantic tradition." But let us not become mired down in nostalgia.

In the same way our nation cherishes its past, and reveres its traditions, the railroad industry can take pride in its vital role in the great Western expansion which had its birth at Promontory.

Like the nation at large, however, railroads must face the competitive challenge of the present day. Wistful yearning for another era will not meet this test.

Granted, we can all take pleasure in an occasional glance over our shoulders at the glories of "cinder and smoke," but then let's get on with the task of communicating what modern-day railroading is all about.

Thomas C. Buckley
Assistant Manager, Public Relations
Southern Pacific

High-speed train service

Pittsburgh, Pa.

To the Editor:

Mr. Griswold's article researching the market for high-speed train service in the Northeast Corridor does not paint a very encouraging picture [RA, May 20, p. 24]. He foresees a meaningful increase in patronage only when train speeds are increased to a 110-mph average. It may be wise for railroads to brace themselves for some unspectacular totals when the service begins.

It is unfortunate that by entering the market in a patchwork, upgrading-the-service-now-existing framework, DOT and Penn Central may cause the eventual failure of the experiment. Only with truly massive expenditures could the rails be brought to the level where speeds would be sufficient to wrest passengers away from the airlines—and there is no promise that such funds are forthcoming. The probability seems quite low that the lines involved will ever be upgraded to a 110-mph average speed.

Speaking more generally—a significant rise in passenger volume would best be achieved by reducing the number of travellers now using auto and bus. It is surprising that Mr. Griswold would discuss this market in a few sentences. It is true, I believe, that New York Central restructured its passenger service to deal expressly with this market. The ability of the auto to produce low (out-of-pocket) cost, convenient transport is approached only by the bus. Concerning the ability of the bus to provide transportation at low capital and labor expenditures, one may be hard-pressed to defend a very expensive over-manned, "high-speed" train. After all, the bus costs only $35,000 and required no fireman or flagman. Placing aside the respective combatants' stands on user charges, the low first cost, operating cost, and high productivity of the intercity bus has given it an optimum chance of beating the auto at its own game. With the high-speed cars more complicated than a 707 (so they say) and costing what they do, railroads have a steep, hard fight ahead.

J. G. Fuller

DIVIDENDS DECLARED

CHICAGO GREAT WESTERN.—5% Preferred, 62½¢, quarterly, payable June 28 to holders of record June 14.

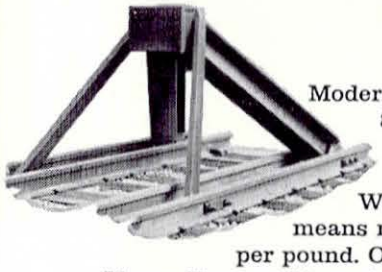
ST. LOUIS-SAN FRANCISCO.—55¢, quarterly, payable June 17 to holders of record June 3.

SOUTHERN PACIFIC.—40¢, quarterly, payable June 17 to holders of record May 27.

UNION PACIFIC.—50¢, quarterly, payable July 1 to holders of record June 3.

Hayes

ALL-STEEL Bumping Posts



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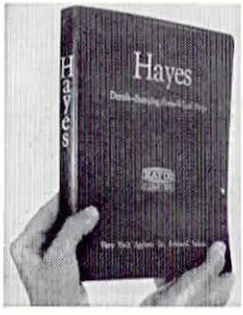

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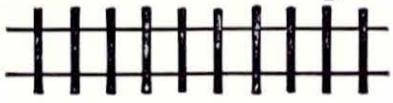

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FREIGHT-CAR DELIVERIES

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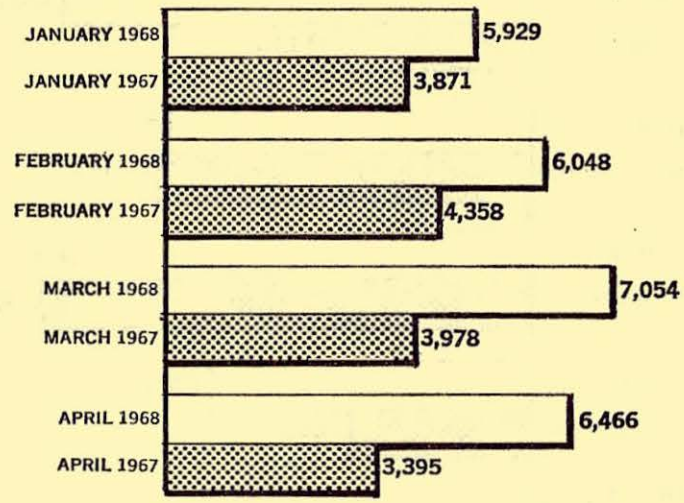
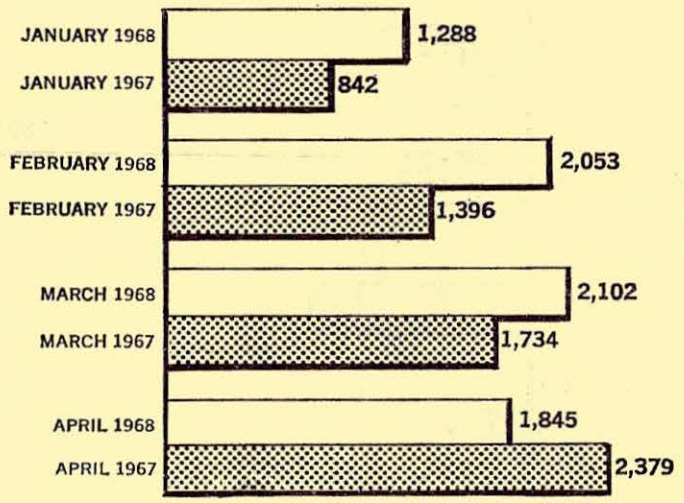


RAILROAD SHOPS



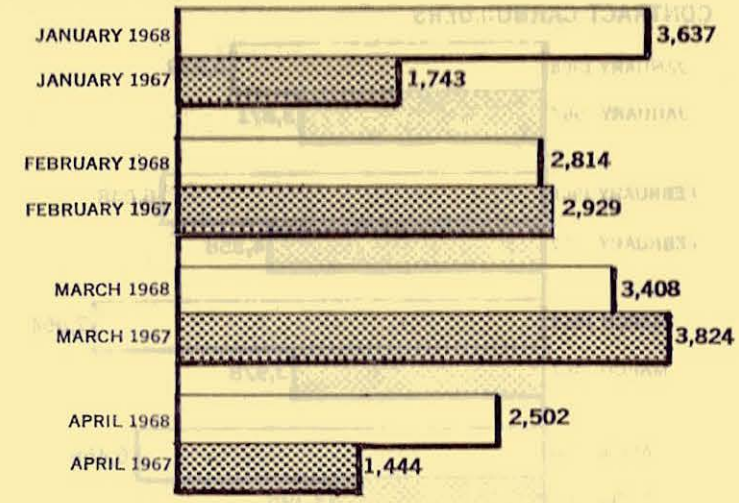
Source: American Railway Car Institute and AAR.

Current statistics

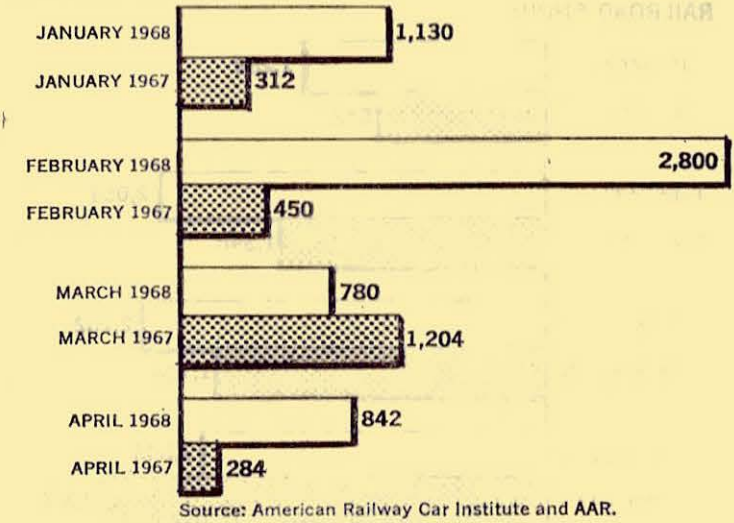
Carloadings, revenue freight	
22 wks., 1968	11,677,105
22 wks., 1967	11,783,450
New freight cars on order	
May 1, 1968	20,364
May 1, 1967	34,960
New freight cars delivered	
4 mos., 1968	21,953
4 mos., 1967	32,785
Serviceable cars	
May 1, 1968	1,398,772
May 1, 1967	1,422,886

FREIGHT-CAR ORDERS

CONTRACT CARBUILDERS



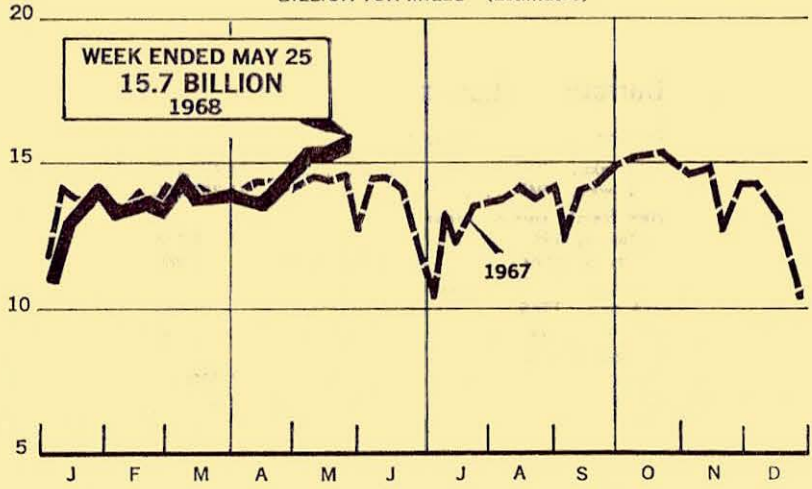
RAILROAD SHOPS



Source: American Railway Car Institute and AAR.

RAIL FREIGHT TRAFFIC TRENDS

BILLION TON-MILES (Estimated)



Source: Association of American Railroads

MARKET OUTLOOK

CARLOADINGS

Loadings of revenue freight in the week ended June 1 totaled 528,028 cars, the Association of American Railroads announced on June 6. This was a decrease of 61,189 cars, or 10.4%, compared with the previous week; an increase of 19,183 cars, or 3.8%, compared with the corresponding week last year; and a decrease of 19,657 cars, or 3.6%, compared with the equivalent 1966 week. Ton-miles generated by carloadings in the week ended June 1 are estimated at 13.9 billion, an increase of 8.3% above the corresponding week of 1967, and 2.8% above the 1966 week.

REVENUE FREIGHT CARLOADINGS
For the week ended Saturday, June 1

District	1968	1967	1966
Eastern, including Allegheny and Pocahontas ..	205,927	200,238	219,765
Southern	120,721	109,541	109,676
Total Eastern and Southern Districts	326,648	309,779	329,441
Northwestern .	71,997	71,303	80,805
Central Western	94,526	93,220	101,785
Southwestern .	34,857	34,543	35,654
Total Western Districts	201,380	199,066	218,244
Total All Roads	528,028	508,845	547,685
Commodities:			
Grain and Grain Products	31,072	35,321	43,508
Livestock	1,064	1,190	1,613
Coal	91,202	97,272	104,572
Coke	8,405	7,237	8,359
Forest Products	37,968	36,074	36,888
Ore	53,715	51,709	59,228
Merchandise l.c.l.	3,409	4,670	5,355
Miscellaneous .	301,193	275,372	288,162
June 1	528,028	508,845	547,685
May 25	589,217	573,428	611,744
May 18	580,603	571,343	609,325
May 11	575,544	575,596	611,161
May 4	580,920	564,369	602,244
Cumulative total, 22 weeks ...	11,677,105	11,783,450	12,201,012
Estimated revenue ton-miles (billions) 22 weeks ...	315.0	305.3	307.9

PIGGYBACK CARLOADINGS

U. S. piggyback loadings for the week ended May 25 totaled 26,325 cars, carrying 42,350 trailers, compared with 23,435 cars, carrying 39,018 trailers, in the corresponding 1967 week. Loadings for 1968 up to May 25 totaled 522,372 cars, carrying 844,-861 trailers, compared with 471,503 cars, carrying 775,831 trailers, in the corresponding period of 1967.

IN CANADA

Carloadings for the seven-day period ended May 14 totaled 78,201 cars, compared with 76,988 for the previous seven-day period, according to the Dominion Bureau of Statistics.

	Revenue Cars Loaded	Total Cars Rec'd. from Connections
Totals for Canada		
May 14, 1968	78,201	25,221
May 14, 1967	79,107	25,816
Cumulative Totals		
May 14, 1968	1,318,581	465,802
May 14, 1967	1,342,972	480,442

FREIGHT TRAIN CARS

• *Penn Central.*—Ordered 790 new freight cars at a cost of $15 million, to be built at Samuel Rea Shop at Hollidaysburg, Pa. Included in the order are 429 heavy-duty 60-ft box cars of five different types for hauling appliances and other manufactured articles, and 361 100-ton covered hopper cars for moving dry bulk commodities. Deliveries will begin in August and will be completed in the third quarter.

• *Seaboard Coast Line.*—Ordered 400 jumbo wood chip cars from Pullman-Standard at a cost of $5.5 million. Deliveries will begin in July. The order will bring SCL's fleet of wood chip cars to 1,700 units.

PIGGYBACK

• *Trailer Train.*—Placed orders for an additional 828 cars, as follows: from Pullman-Standard, 248 low-level, 100 standard-level, 6 all-purpose and 8 flat cars; from ACF, 247 low-level cars; from Bethlehem Steel, 205 standard-level and 14 flush-deck cars. All except the flat cars will be 89 ft, 4 inches long. The flat cars will be 60 ft. long. Since Jan. 1, Trailer Train has placed orders for 3,022 cars. As of May 28, the TTX fleet included 46,102 cars in service and on order.

LOCOMOTIVES

• *Illinois Central.*—Ordered six 3,600-hp six-axle Century 636 locomotives from Alco. The locomotives will be used for coal unit train service.

CAR OWNERSHIP

• *Serviceable cars decline.*—Revenue freight cars in serviceable condition owned by Class I railroads on May 1 totaled 1,398,772, compared with 1,422,886 on May 1, 1967, according to most recent AAR Car Service Division report. Estimated total ownership of all railroad- and privately-owned revenue freight cars on May 1 (see table below), was 1,813,800 (average capacity: 63.40 tons), compared with 1,831,870 (average capacity: 61.72 tons), on May 1, 1967.

ESTIMATED OWNERSHIP—ALL REVENUE FREIGHT CARS
(May 1, 1968, vs. May 1, 1967)

		Box	Covered Hopper	Gondola	Hopper	Flat	Refrig.	All Others	Total
Class I	1968	561,602	121,046	199,301	416,901	67,696	51,707	57,563	1,475,816
	1967	579,074	111,048	205,982	426,867	66,054	49,888	59,968	1,498,881
RRO&C Refrig.*	1968	0	0	0	0	0	49,799	0	49,799
	1967	0	0	0	0	0	52,980	0	52,980
Private	1968	1,469	28,100	292	2,828	40,936	15,865	172,129	261,619
	1967	1,857	26,194	599	1,745	36,460	15,685	171,104	253,644
Class II & S&T†	1968	9,298	893	5,277	8,668	649	687	1,094	26,566
	1967	9,122	813	5,503	8,521	702	558	1,146	26,365
GRAND TOTAL	**1968**	**572,369**	**150,039**	**204,870**	**428,397**	**109,281**	**118,058**	**230,786**	**1,813,800**
	1967	**590,053**	**138,055**	**212,084**	**437,133**	**103,216**	**119,111**	**232,218**	**1,831,870**

*Railroad owned and controlled refrigerator car lines.
†Class II railroads and switching and terminal companies.

YOU OUGHT TO KNOW

IC launches centralization of dispatching

Illinois Central has started a two-year project that will centralize all train dispatching at its Chicago headquarters. More than 80 dispatchers and clerical workers will be moved from six points: Carbondale and Champaign, Ill., Waterloo, Iowa, Vicksburg, Miss., Paducah, Ky., and Memphis, Tenn. From Chicago the men will handle dispatching for their own areas—over microwave. Advantages include closer work with car and power distributors, better equipment utilization and better communication between Chicago and the divisions.

Fruehauf completes acquisition of Paceco, Inc.

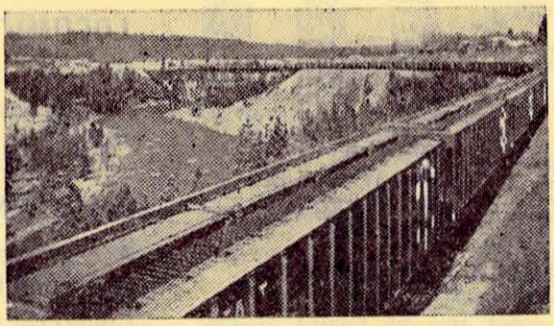
Paceco, Inc., Chicago-based manufacturer of container, trailer and bulk commodity handling equipment, is now a division of Fruehauf Corp., through issuance of 306,400 shares of Fruehauf common stock in exchange for Paceco assets and liabilities. William E. Grace, president and chief executive officer of Fruehauf, called the move a "further step in the planned expansion of Fruehauf's Total Transportation goal of providing equipment to each of the four modes, road, rail, sea and air."

Safety Council public safety awards made

Thirteen railroads will be receiving the National Safety Council's 15th annual railroad public safety activities awards. Winners, in this non-competitive award program, are Santa Fe, Canadian National, Canadian Pacific, Burlington, Great Northern, Illinois Central, Norfolk & Western, Pennsylvania, Frisco, Cotton Belt, Seaboard Coast Line, Southern Pacific and Union Pacific.

Drafting is not endorsing, DOT tells House panel

Provisions of a pending pipeline safety bill which have been assailed by Secretary of Transportation Alan S. Boyd were written, but not endorsed, by Boyd's Department of Transportation. This was explained by Assistant Secretary John Sweeney of DOT at last week's sessions of House Interstate Commerce Committee hearings on DOT's railroad safety bill. The pipeline issue got into the act as a result of a Boyd speech opposing the pipeline safety bill which has been cleared by the House committee. Committee members used the railroad-bill hearings to air their resentments about the Boyd speech (RA, May 27, p.12, and June 3, p.12). They also said provisions to which Boyd objected most vigorously were written at DOT. Sweeney explained that DOT was confronted with a situation wherein it could not get the objectionable provisions out of the bill—so, it suggested what it considered less objectionable language. Its suggestion was adopted by the committee, but Boyd emphasized that DOT never accepted the involved provisions—it merely suggested a draft which would do "less damage" than the original.



The GN version of railroad flour-power

What does 175,000 bushels of wheat look like? Strung out over the countryside in 50 Big Sky Blue covered hopper cars, it looks like this. Great Northern originated the unit grain train at Wolf Point, Mont., with dawn-to-dusk loading from three elevators. The Japan-bound wheat was then moved via GN-Spokane, Portland & Seattle to Portland for transloading into the holds of two ships at the Peavey Company's terminal elevator. In the photo, four SP&S diesels take the train onto the Fort Wright bridge over the Spokane River, on the last leg of the 1,100-mile run.

RSMA probes quality control

(Continued from page 25)

times they are told, sometimes they are not, and seldom are they told what the railroad is going to do about the delay.

Truckers assist in unloading, Carnahan pointed out. In an effort to offset this advantage and get Armour customers to use more rail service, Armour recently tried offering a 10-cents-per-hundredweight unloading allowance. "But it did not change the customers, because of inconsistent rail service," Carnahan said.

● **Railroad should tell.** Armour attempts to choose the best possible shipping route, regardless of mode. In one route selection, Armour discovered that a railroad could save 24 hours on a previously-mapped route. Armour told the railroad, but "the railroad should have told us," Carnahan said.

Another sore spot is rail policy toward special damage. In one example, Armour was presented with customer's charges for handling promotion commodities that wound up moving as a "no-bill empty." When the customer finally found the car, he had to unload and move the goods to meet his promotion schedule. Armour passed on the extra charges to the railroad. However, the railroad refused to pay on the ground that the shipment was not designated as special damage. Carnahan said the railroad argued that a rail special damage policy would not work, anyway. But motor carriers have such a policy, he added: "Maybe we should ask just what do railroads mean when they use the word, service."

● **General Mills agrees.** For General Mills, use of rails has declined from 90% to 70%, and this definitely is a problem for railroad operating management, Smith said. Are rails a service industry only because they do not have a tangible commodity, or also because they accommodate their service to the customer? This is a question operating people must answer, Smith said.

When it comes to measuring service, profit and loss should be the boundaries. There is a definite cause and effect relationship between profit and service that railroad accounting systems do not show, Smith said. He pointed to an "absolute plateau" of tonnage originated by rails—1.5 billion tons each year from 1958 to the present. And he added, "carload transfer is no more reliable today than it was 10 years ago—and it may be less reliable."

● **Shipper factors count.** In addition to competition from other modes, there are some competitive factors presented by the shippers that railroads have ignored: These are "our level of inventories, our usage of warehouses, and our location of plants," Smith said.

Bigger locomotives pulling bigger cars have no relation to quality service, Smith contended: "There's no reliability in carload movement from consignor to consignee, from our viewpoint. And it would appear that the measure of rail service is a bigger unit for lower costs per ton-mile."

Would a change in demurrage rules help? No, he said, because that is not a solution to time wasted loading and unloading, caused mainly by poor service. "We could control loading and unloading if we got good service," Smith said.

Thus, what is needed is a revenue-oriented measure. Rails need a measure that identifies the controllable cause-effect relationship between a controllable level of service and a level of reliability in moving carloads.

Cameron said that Union Carbide expects better service, too, but is using a computerized car-location system to help railroads provide a better product. The system helps improve utilization, provides for production scheduling, improves operational control, and improves customer service. It is used to measure the performance of carriers and routes through exception reporting.

● **One road's answer.** Agreement with the shippers came from E. R. Lichty, manager of transportation service development for C&O/B&O, who said car measurement definitely is superior to train measurement. And that is the principle on which his railroad's pilot project in quality control is based: "As nearly as possible, we want to look at service in the same manner as do our customers. This is why we are measuring individual car performance as opposed to train performance. Our customers measure only their cars, not our trains. They talk to us in terms of trains only to help us identify the cause of their problems."

The C&O/B&O project provides three commercial service reports that cover over-all dock-to-dock performance, interline performance, and salesman's performance. The salesman's report is aimed at helping him know ahead of time when his road is failing in service so that a shipper transfer may be imminent. Without the report the situation might develop like this: "A movement begins and is watched closely by the salesman and the operating personnel involved. Everything goes well for a period of time and then the

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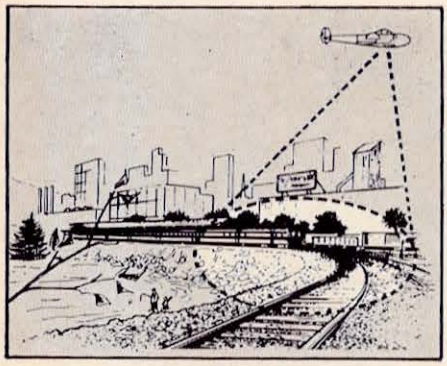

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attention of all concerned is directed elsewhere. The next thing we know, the salesman calls on the customer and is confronted with the records for the past two weeks that show the railroad's poor performance. The salesman, unfortunately, learns that, effective that day, he has lost the movement to a competing line."

● **The key: Standards.** In designing this market approach to quality control, the most important lesson learned was that standards establishment is the key for system design. It is the key from the standpoint of input and handling as well as from the angle of management reports:

The determination of standards forces the commercial and operating departments to "resolve what had been previously-unanswered questions".

"I think this is generally found to be an advantage of computers in nearly all applications," Lichty said. "You can't set critical standards if you don't know what service you are offering. Also, if you move into the area of dock-to-dock performance evaluation, you are forced to set standards that will apply to each customer's dock for inbound and outbound shipments. All of this then brings about a documentation of service design that might previously have not been accomplished."

Measurement of overhead, dock-to-dock service, is accomplished as follows, based on data from interchange reports: A computer chooses interchange receipt records and interchanged deliveries at route terminations. Once a week the information moves from magnetic tape to punched cards which are processed to match interchange receipts with interchange deliveries by car initial and number. The number of elapsed hours from receipt to delivery then is calculated. The elapsed period represents the railroad's "total span of performance responsibility."

Rather than use a maximum elapsed-time standard, however, more specific standards are set for each pair of oncoming and off-going connecting lines. Within each combination, standards are set for each hour of receipt at the beginning of the route. As Lichty explained, "Therefore, the result is that we develop a standard table that covers all possible circumstances. Each individual movement is then compared against the proper standard from this table. The standard is determined by first selecting the proper combination of roads and then the hour of receipt. This selection process establishes the one specific standard applicable to that individual movement. The comparison reveals whether a car is within standard, beyond standard, or the extent to which it is beyond standard." ■

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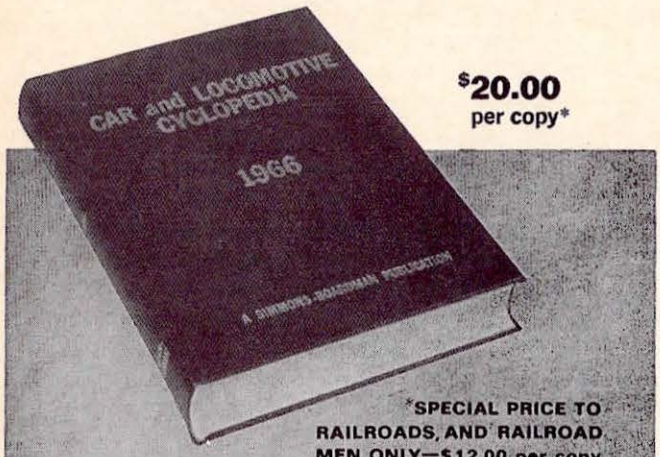

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VIEWPOINT

The shape of tomorrow's competition? One trucker thinks so

The rig pictured above cannot be seen today on any U.S. highway —because it is, legally, an outlaw. But tomorrow? Its enterprising builder, the Woods Corp. of Oklahoma City, has high hopes.

Woods is a diversified corporation whose trucking division—Woods Industries—ranks among the five largest auto-haulers in the industry. In 1962, Woods transported an average of 4.9 autos per trip. In 1967, thanks to the addition of a number of eight-car units, the average was up to 6.6 cars. And even that (according to John Hefferin, president of Woods Industries) is peanuts—considering what may lie ahead.

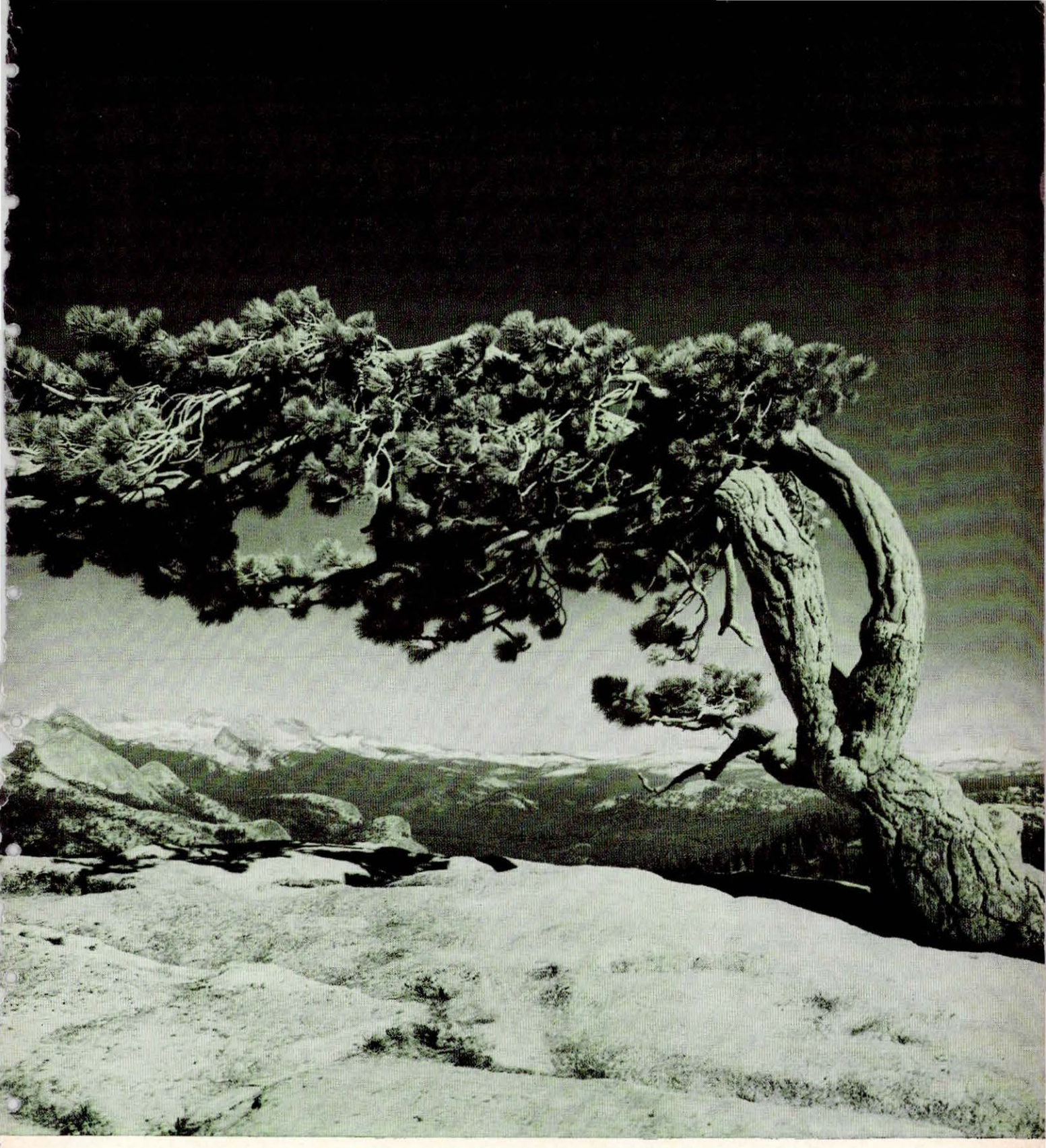
The photo reproduced on this page also appears in the Woods annual report, and Hefferin has this to say about it:

"Woods has built and tested—on the Kansas Turnpike—a 13-car unit. Mechanically, it's not only feasible but actually comparable in length to units presently allowed on other toll roads. However, its future use would depend upon changes in highway regulations in the 30 states where Woods and United [its auto-carrying subsidiary] have authority to operate. States with higher population density necessarily have stricter regulations. It is conceivable that this 105-ft unit might eventually be approved for use on interstate and other divided highways."

Railroaders who wonder how far the truckers will dare go with their double-bottom schemes now have a new answer—and there can be no assurance that this is the ultimate answer.

We have no real quarrel with Woods for coming up with this ingenious piece of hardware; Woods is simply guessing (and, we fear, guessing well) that the remaining barriers to the operation of trains-of-trailers on highways are going to come tumbling down.

But we do quarrel with those in Washington who on the one hand plead for common-sense transportation—and on the other, vote for this kind of rig on our public thoroughfares.



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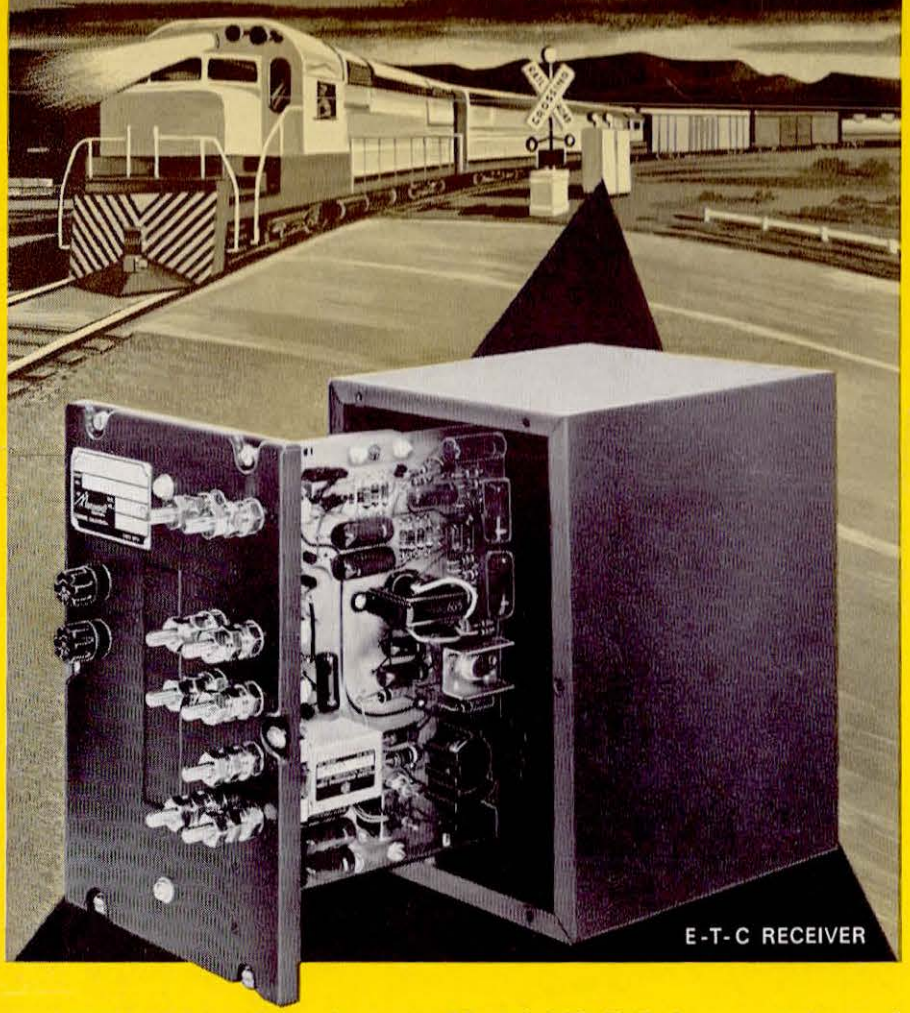

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